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Master Negative
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CONTENTS OF REEL 203

1) Pennsylvania farmer
   Pennsylvania farmer, vol. 33
   MNS# PSt SNPaAg203.1

2) Pennsylvania farmer
   Pennsylvania farmer, vol. 34
   MNS# PSt SNPaAg203.2

3) Pennsylvania farmer
   Pennsylvania farmer, vol. 35
   MNS# PSt SNPaAg203.3

Pennsylvania farmer

Missing:

Vol. 33, 1913, no. 10, 13, 22

Vol. 34, 1913, no. 5, 20

Vol. 35, 1914, no. 1, 5, 17-18, 22, 24

Vol. 37, 1915, no. 10

Vol. 38, 1915, no. 4, 12-13

Vol. 39, 1916, no. 8

Vol. 44, 1918, no. 11-12, 26

Vol. 46, 1919, no. 15

Vol. 47, 1920, no. 22

Author: Pennsylvania farmer

Title: Pennsylvania farmer, vol. 33

Place of Publication: Meadville, Pa.

Copyright Date: 1913

Master Negative Storage Number: MNS# PSt SNPaAg203.1

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130 00 Pennsylvania farmer (Meadville, Pa.)
245 00 Pennsylvania farmer.
246 1  $iAt head of title: $aAgriculture, the keystone of national prosperity
260   Meadville, Pa. $bGeorge H. St. John,
300   v. $bill. $c55 cm.
310   Weekly
500   Publisher: H.C. Crawford, <1896>.
500   Missing and mutilated pages
500   Issues for <Vol. 33, no.1-> published by: The Lawrence Publishing Co.,
      Philadelphia, Pa.
500   "Devoted to agricultural industries, news and the household."
500   Description based on: Vol. 8, no. 31 (July 26, 1888).
515   Occasional irregularities in numbering
515   Issues for <Jan. 4, 1913>-Sept. 10, 1921 numbered <Vol. 33, no. 1>-v.
      50, no. 11; issues for Sept. 17, 1921- numbered Vol. 84, no. 12- and
      also carry whole numbering 2170-
515   Issue for Feb 16, 1918 lack numbering but constitute Vol. 43, no. 7
533   Microfilm $mv.33 (1913)-v.109 (1933) $bUniversity Park, Pa.
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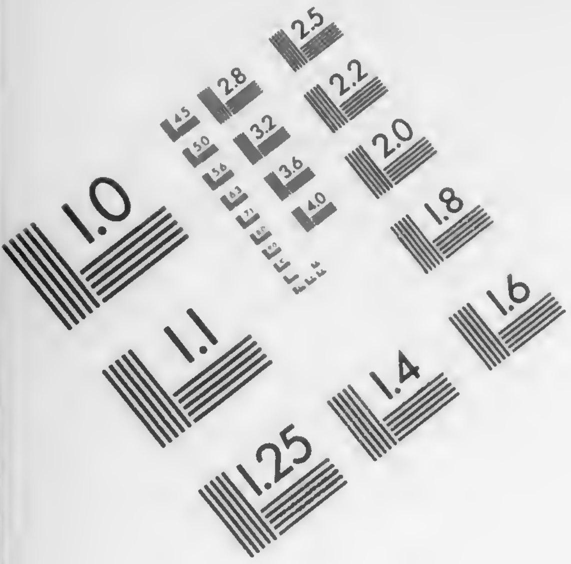

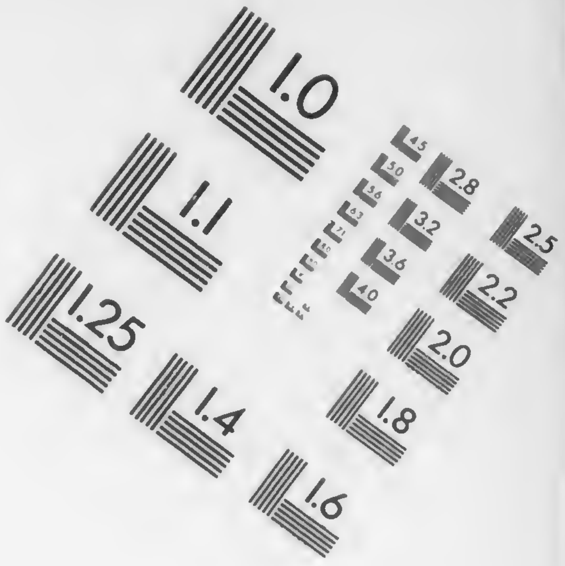

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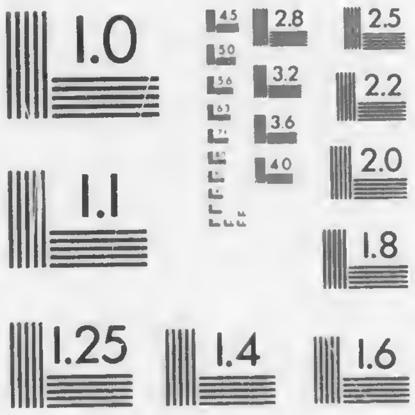

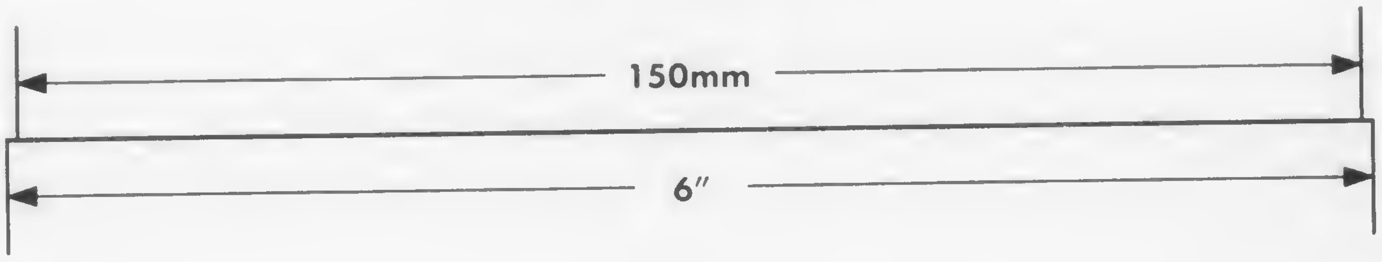

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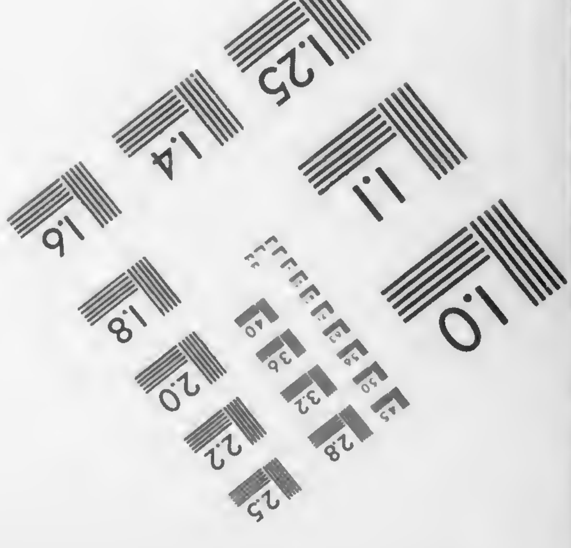

Volume 33, 1913

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PENNSYLVANIA FARMER
AGRICULTURE THE KEYSTONE OF NATIONAL PROSPERITY
ESTABLISHED 1880
PUBLISHED WEEKLY
VOL. 33.—No. 1. PHILADELPHIA, PA., SATURDAY, JANUARY 4, 1913. 50 CENTS A YEAR.

Headle Dr. T. J
Rutgers College
N. J. Agr.

Impressions of American Horticulture

By Dr. NIELS ESBJERG, Chief Horticulturist of Denmark.

It is with pleasure that I relate a little about my impressions of American fruit culture; but, first of all, I beg you to remember that, as a matter of course, it is very difficult to get a fair idea of American fruit culture in scarcely three months. American fruit culture has, and has had, three advantages in preference to the European, namely:

First—To be free of the old, and in a great part erroneous, theories and ideas which we in Europe have inherited from the time where the fruit culture mainly was associated with the cloister and palace gardens.

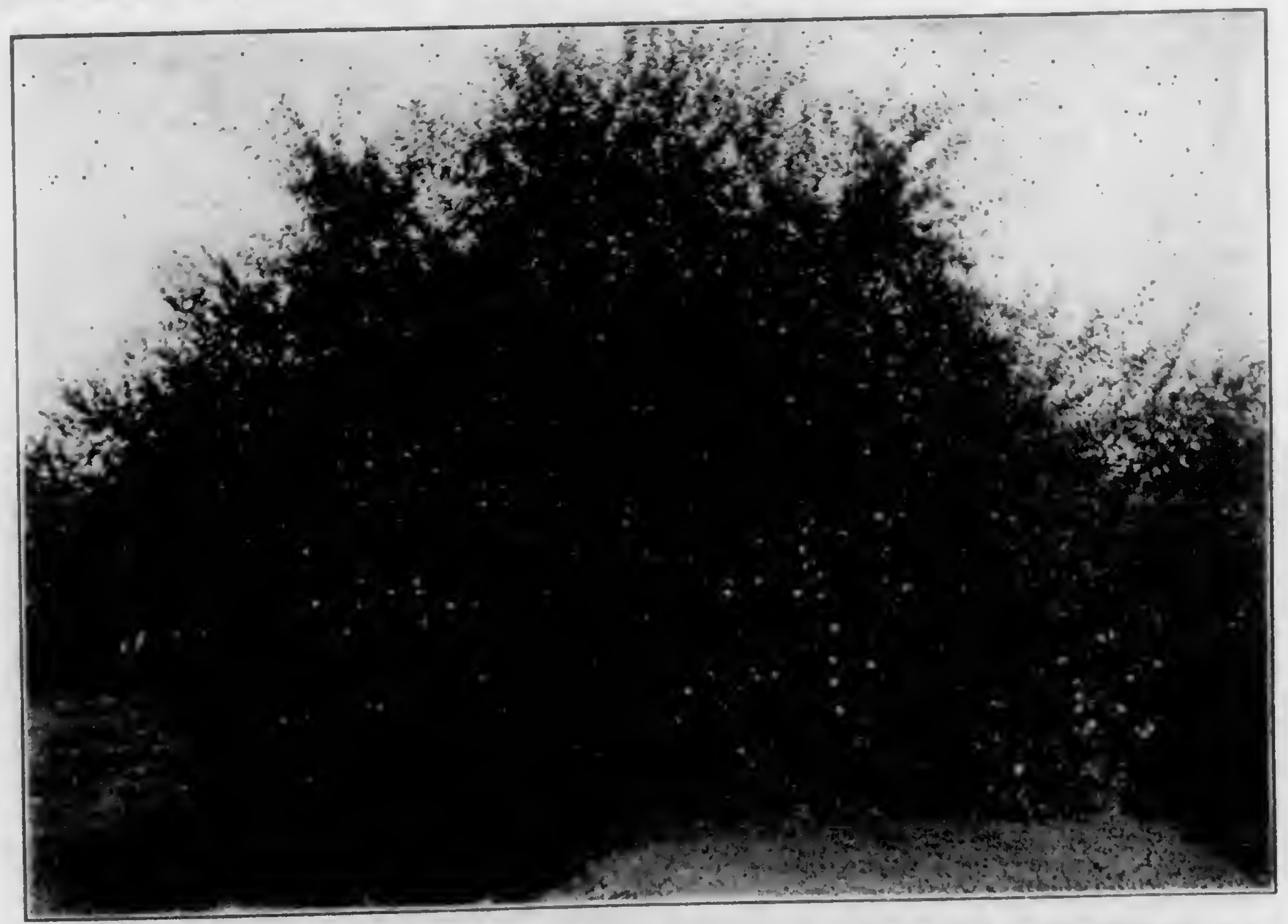
Second—To have a good home market. The American people are partial to fruit and have large buying means.

Third—To have new, productive and cheap land.

Unprejudiced and business-like—in pursuit of dollars and cents—the American agriculturist has, in a very short time, worked up a fruit culture which, with respect to the United States, can almost supply the home market and successfully take up the competition on the Europen market.

Of the mediums that have been used and still are used for growing big crops of fruit, I think there is a particular reason to emphasize the grand work that has been accomplished in breeding new fruit varieties adapted to the local circumstances; the energetic fight against fungus and insect pests; the prevention of frost injuries; the regulation of the humidity circumstances (draining and irrigation), and that, in comparison with European circumstances, where more time has been spent speaking about pruning of the fruit trees than about accomplishing it.

In using a suitable, attractive package, and thoroly careful packing and in employing refrigerating houses and refrigerator railway carriages, the Americans have attained to more than the European, in being able to send the fruit on the market in a condition and at a time when a good price can be obtained.



41-YEAR-OLD BELLEFLOWER APPLE TREE ON KEYSTONE FRUIT FARM, WYOMING CO., PA.
Record of Production of No. 1 Fruit, 1910, 12 bbls.: 1911, 15 bbls.: 1912, 14 bbls.

It is surprising what there has been done, but still more can be done. There are many who are behind the most advanced, both with regard to growing the fruit and disposing of it. It will also be possible and necessary for the most advanced to make progress, and they will certainly do so.

The land is getting dear in America, and it is also, in many places, getting exhausted of plant-food. There will gradually arise new working expenses, which will lessen the importance of wages in farm economics.

A TYPICAL AMERICAN PEACH ORCHARD.

The American farmers must, in the future get into a more intense working manner, and a condition for this is that they, to a still higher extent, must procure accurate information about the cultivating value of the different varieties under different circumstances, and acquire a more accurate knowledge of the most suitable methods of cultivation.

The fertilization question is thus a domain of which there is rarely but very little known. The experiment stations, which have already given much valuable information to the American farmers, must satisfy the claims for still further accurate information and get into other working methods; working methods that will require the experimentalist not to share his time both to educational, consulatory and experimental work. The fruit grower must also be much more accustomed to patience; he must learn to wait for the experimental results until they can be found reliable.

I have no doubt but that the American experimentalists also in the future, as the circumstances change, will be equal to the task and be sufficiently ahead of time. There has thus just been introduced in Pennsylvania a new system in experimental work, where an experimentalist has only experimental work in hand. Professor Stewart just set to work with the most obvious experimental task—the solution of the fertilization question—and he endeavors to solve it in a more thorogoing way than, as far as I know, it has ever been tried before. Also several other states have begun new series of experimental work, which takes aim at giving guidance of more intense working systems. The good beginning forebodes well of the future development of the commenced experimental work.

The Europeans can at the present time learn a great deal from American fruit culture—which they surely also can do in the future—and fortunately it is very pleasant to undertake a study journey to North America. The men on the experiment stations and agricultural colleges, as well as the private fruit growers and others that have anything to do with fruit culture (trade and preparation), show an amiability and readiness to help the stranger which are fully in harmony with the modern American fruit culture.

May I here embrace the opportunity to render my thanks to those readers of this paper who have shown me so much amiability and help on my visit to North America. I think it goes with every visitor, as with myself, that one thinks it poor only to receive without being able to give anything in return.

From the fruit culture in Europe the Americans can learn but very little; but the American experimentalists can, perhaps, get some ideas from Europe—not so much from our experiments on fruit culture, which, when the work of the "Woburn Experimental Fruit Farm" are excluded, still are in the beginning state, as from our experiments on culture of field plants—which can be useful to the future experimental work.

I shall, in this connection, only mention that the development of the experimental work in the different European countries do not always bear a downright relation to the largeness of the country. Some of the best of American horticulture is confined to small areas in the country, close to which are backward regions.

MONMOUTH COUNTY FARMERS' EXCHANGE

General Manager's Report for Year Ending November 30, 1912.

The business of our Exchange for 1912 closed on November 30, and we are presenting a summary of our year's work, showing conditions, advancements and results.

Seed Potatoes.—Soon after our last annual meeting it was very evident that serious conditions were facing us in the seed potato market for spring delivery. Previous to this time we had secured reliable information that there would be but a very few Giants to be had in New York State. Acting upon this knowledge, we made contracts for Maine seed to supply the shortage on Giants. It was fortunate that we were able to do this, as the price advanced to a high figure, but because of our early contracts we furnished our members with their needs at a saving of $6,000.

When we came to buy our seed for this fall we found the conditions in New York State very bad. In western New York the Mahogany Rot was so serious that we could not get enough Genesee County Giants that were clean to supply our needs, and had to buy most of our Giants from Washington County, where there was less rot. We kept our inspector in the state most of the shipping season, selecting seed, so as to get the cleanest stock to be had, and we think, considering the conditions, that we delivered the very best to be had this year.

Fertilizer.—The increase of our fertilizer business taxed the capacity of our three warehouses so much during the winter and early spring that the directors deemed it advisable to put additions to our buildings at Freehold and Marlboro, and we have added during the summer 1,500 square feet to the Freehold factory and 1,700 square feet to the Marlboro house. This gives us, in our three warehouses, a floor space of 21,500 square feet, with a mixing capacity of 5,000 to 5,500 tons.

We are giving a fertilizer of the highest grade and quality, made from the best materials it is possible to buy, materials that produce plant food in the purest and most available form, without a pound of filler of any kind, so compounded as to furnish the growing plant with the proper food continuously, that when one element finishes its work the next is ready to act, thus giving to the crop that steady growth so necessary to produce satisfactory results. We believe, by giving a pure mixture of fertilizer without any foreign material of any kind, that the farmer who uses it in proper quantities continually, at the end of five years will find his soil in a much better condition than when he began, besides having the increased yield in his crops.

For fertilizers delivered during January and February, settlement is not required until March 1st. Then our members can pay in cash or bankable notes. If a note is given, the maker pays the interest. This places the man who pays cash and the one who gives a note on the same basis.

Crop.—Generally, the yield in potatoes was about 15 percent, apples 30 percent, and asparagus 25 percent less than last year. The dry weather, no doubt, shortened the potato and apple crops, and quite a number plowed out their asparagus beds because of low prices, thus curtailing the output materially.

Markets.—Western markets beyond the State of Ohio shut their doors against us this year because of the excellent crops of potatoes raised in Michigan, Minnesota and Wisconsin. These, being of excellent quality, well graded, at lower price and with cheaper freight rates, controlled all the West beyond Ohio, as well as the Southwest. In the early part of the season, we had a fairly good market in the eastern and middle states. This was curtailed to some extent, owing to the inferior grade of our stock. We were frequently told that the South Jersey potatoes were of much better grade than ours, and this, of course, operated against us. Thus our markets were very much contracted compared with what they were in 1910 and 1911. This, of course, caused lower prices. The average price paid the farmers for potatoes, including Giants and Round stock, was $1.32½ per barrel.

Territory.—We have extended our territory and increased our loading stations to 30. There is only one station within our borders now that we do not operate. Besides the additional buildings added to our fertilizer plants, we have also constructed one in the Central Railroad freight yard at Freehold, 16 x 50 feet, for the storage of empties, fertilizers, chemicals, etc., as required. At each of our new loading stations we have erected a building and wagon scales suitable for our needs.

Membership.—Our membership has increased during the year from 1,049 at our last meeting, to 1,227, an increase of 178. At our last annual meeting our paid-in capital stock was $74,285. It is now $75,195, an increase of $910. At our directors' meeting a dividend of 5 percent was declared.

Business.—As stated, the prices received for potatoes were not as large as they were in 1911, and, therefore, the amount of business done will not show as large in amount of totals; yet, in quantity of business, there is not very much difference, notwithstanding that the yield in the potato crop was considerably less. The total amount of business for the year 1912, amounted to $941,765.51.

Number of Packages Handled.—

		Cars.
412,202	bbls. potatoes	2,265
4,175	bbls. apples	22½
18,872	baskets apples	34½
890	bbls. and sacks pears	5
1,642	baskets pears	3
10,012	crates asparagus (240,282 bunches)..	40
4,105	crates berries	16
500	crates tomatoes	2
1,637	bbls. and sacks pickles	9
35	crates and baskets	
202	sacks and bbls. corn	1
75	crates, baskets and bbls, melons....	
116	bbls. and sacks turnips	
85	bbls. cabbage	
11	bbls. squash	
190	pkgs miscellaneous	
1,855	bags wheat and rye	8
456,604	Total......	2,406

We have, in addition to the above, sold 28,517 bbls. seed potatoes, an increase of 1,517 bbls., or 154 cars. Our fertilizer output was 49,190 bags, an increase of 16,860, or 283 cars. We have also received 33,885 fruit hampers and 9,520 barrels, making a grand total of 577,716 packages, or a grand total of 2,981 cars.

Five years ago the Monmouth County Farmers' Exchange was incorporated, and when it began business in July, 1908, it had a paid-in capital of $7,000, and that was all. It had no business of any kind. No father had built a business by many years' toil and then passed it on at his death to the Exchange as his son. It was unknown to the trade with whom it hoped to do business. It had no good will. It had not a customer in the world. It had nothing but the beginning of an organization. In fact, it had nothing but the form, and not the substance. Its business had to be built from the bottom, markets had to be sought for, customers needed to be found, plans were to be thought out, the trade had to be notified, systems arranged for conducting the operations at all loading points, for keeping the books, for paying the farmers, and for collecting claims, systems for selling the goods, for collecting the bills. In fact, for placing the goods in every state in the country, this side of the Rocky Mountains. This was no small task, and it needed the assistance of every member of the firm. The total amount of business the Exchange has done in these five years is interesting reading, and for that reason we give it as follows:

Total cars handled in 5 years.....	10,910 cars
Total shipments of potatoes.......	4,603,962 bushels
Total shipments apples and pears..	153,890 bushels
Total shipments asparagus	1,010,822 bunches
Total ship. misc. fruits and vegts..	41,480 pkgs.
Total sales of seed potatoes.......	282,750 bushels
Total sales of fertilizers, 4 years..	11,145 tons
Total amount of business, $4,320,748.09.	

The average price we have paid the farmer for potatoes during the five years has been 61c per bushel, or $1.68 per barrel. Never in the history of potato raising in this section has any such average been obtained for this length of time. This is no small achievement for five years' work. In 1908 we had no business, but we had $7,000 and the beginning of an organization, and for the most part staunch and loyal partners in the firm. Today, in spite of opposition and discouragements, we place in the hands of our members a capital and surplus of $101,734.26, a complete organization, and an immense business that only they as partners in the concern can destroy. —W. H. Ingling, General Manager.

THE NORTHERN NUT GROWERS MEET

The Northern Nut Growers' Association proposes to prove that nuts may be grown in our locality successfully and profitably, and it was quite fitting that the third annual meeting should be held in Lancaster County, for here is being done some of the most advanced work in nut propagation. Indeed, the Engles, of Marietta, made the very first introduction of the Paragon chestnut into America, and the most careful work in the propagation of the Persian walnut is known of wherever the walnut is best grown.

This third annual meeting was held in the court house, Lancaster, December 18 and 19, and was an unqualified success. The very extensive exhibit of nuts of all kinds, from the pecan of the south to the hazel of the north, was a revelation in the possibilities of their culture.

In the papers presented to the meeting and in all discussions the entire absence of sensational exploitation of the business of nut growing was pronounced. The profits of the business were never mentioned; but there must be profits, either actual or prospective, for while a man here and there may work at a thing from pure enthusiasm, the majority of a body of men are working for the gain of it. Now, it is a well and widely known fact that the growing of pecans in the south has been exploited and promoted to the very limit of the credulity of innocent investors all over the land, and if these investors, who are putting their money into these proxy schemes of nut and fruit farming, could have attended this Lancaster meeting and heard the condemnation of the promoted schemes, they would save their cash now and their disappointment later.

The subject of promoted nut growing was treated in a paper by the vice-president of the Association, Mr. T. P. Littlepage, who divided promoters of farming fakes into two classes—fraudulent and uninformed. The results of the work of both classes are equally disastrous to innocent investors, as they both lead to failure. There has never been a development scheme of this kind that was a success. There are some things which can not be carried to profitable conclusions by proxy, and horticulture and nut growing are among them.

The president of the Association, the eminent surgeon, Dr. Robert T. Morris, of New York, gave an excellent paper on the work he has done in nut propagation, especially along the more scientific lines of hybridization, describing his methods of securing, transporting, storing and using pollen. He has found it possible, when necessary, to store pollen for as long as four weeks by keeping it dry and cool and allowing it to ''breathe.'' He has found that in dry seasons nut trees are apt to bear pollen of one sex only, and if in such cases no fertilization occurs, a crop failure is inevitable. He has not yet succeeded in crossing the oak and chestnut, but is sure he will in time accomplish it.

Naturally the invidious chestnut blight that is devastating our chestnut trees was a live subject for discussion. Representatives from the Pennsylvania Blight Commission were present and spoke of their work, which so far has been largely confined to the most westerly infestation, to check the further spread of the disease. The work will be brought on toward the east. There seems to be no possibility of holding the disease in check where it has become established, whereas any hopes of its being eradicated and the timber saved in large areas of trees, is absolutely futile. The only relief in sight appears to be the sacrifice of our woodland chestnuts for lumber and fuel purposes, and it is recommended that affected trees be gotten into the lumber market as quickly as possible, as when once diseased, the quality of the timber for poles or lumber purposes deteriorates very rapidly.

Where there are groves of Paragon or other improved chestnuts, or a few garden or lawn trees, conservation work can be carried on by cutting off affected limbs and cutting out and disinfecting the canker spots as soon as discovered, carefully gathering and burning all cuttings and avoiding the making of wounds in the healthy bark, as the disease germs secure ready establishment in such abraisions.

Spraying with bordeaux has been tried with encouraging success as a protective, but not a curative measure. It was found, however, that the standard strength of 5-5-50 injured the chestnut foliage, while a mixture of 4 pounds of copper sulfate and 5 pounds of lime to 50 gallons of water was a safe proportion. The spraying was done every two weeks, till four applications were made. It is quite obvious that the expense of this spraying, and the utter impossibility of doing it with any measure of thoroness in woodlands bars it from use in such cases.

Mr. C. K. Sober, the extensive chestnut grower of Northumberland County, with his 400 acres of groves and nurseries, without state aid or commission investigation, says he has the blight absolutely under control in his Paragons, and that the disease has no more terrors for him than the fruit tree pests have for the modern horticulturist. His plan of campaign embraces eternal vigilance in discovering the first evidence of infection, followed up by the knife

and saw and paint pot. He is on the job, and has done that which the experts assure him can not be done. Commissions frequently have limitations.

Prof. G. Russel Smith believes in nuts and the unbounded possibilities of their successful and enlarged growth till the good time coming, when those who have survived or more recently arrived will be more abundantly and effectually fed from trees than from the grains. He has visions of the time when our swine will be grown and fattened on mulberries and kindred fruits and all kinds of abundant nuts, the industrious hog doing his own harvesting.

''The Beginning of a Nut Tree'' was the subject of a very instructive paper by Secretary W. C. Deming, of Westchester, N. Y. This paper was written and will be printed to meet the demands of those who want to undertake the primary work of nut tree culture. While nuts may often be profitably planted on lands too rough for the plow, such lands should be made fertile, if not already so. The land should be neither too dry nor too wet, and should have such preparation as would be given for apple planting. Late in the fall plant the nuts, three or four to a hole, four inches deep and the nuts about six inches apart. Sometimes the nuts are planted enclosed in wire meshes, to protect from rodents. The nuts that grow are to later furnish stocks on which to graft or bud the desired varieties. Only tried kinds are recommended. If budded or grafted nursery stock is used for planting, it is best to use young trees. These nuts should come into bearing as soon as apples. Mr. Sober, in pictures he showed of his chestnut nursery, had many trees yet in the nursery rows bearing Paragons.

A unique feature of the meeting was a visit by trolley to the interesting nut groves and nurseries of J. G. Rush and the nurseries of J. F. Jones. At the grounds of Mr. Rush were seen some of the famous Persian walnuts that their owner has been developing, and at both nurseries all stages of the work of propagating the Persian on black walnut stock. Mr. Rush, in a paper before the meeting, reviewed the practical part of successful nut growing in this latitude. The exceeding severity of last winter's cold had not injured his trees to any great extent, but the late cold of early spring had, in some instances, proved harmful by rupturing sap cells. He had found, however, in some cases in which trees were thought killed they sprouted out again in the summer, after the injured portions had been removed. The lesson of this experience is that great care must be taken to propagate and plant only hardy varieties.

The following officers were elected for the ensuing year: President, T. P. Littlepage; vice-president, C. A. Reed, Washington, D. C.; secretary, Dr. W. C. Deming, Westchester, N. Y.—W. F. McSparran, Lancaster Co., Pa.

FAMILY PARTNERSHIP ON THE FARM

On a letter that came to me was the head: Mountain View Farm, J. A. Vandervort & Son, Proprietors. I knew something about the father and son, who are co-partners on a farm not many miles distant from my home in Delaware County, N. Y.—that they were keeping purebred cattle and poultry very successfully, and the letter-head suggested to me the desirability of more family partnerships on the farm. In a few days the senior partner of the firm called at my house. I said to him, ''I understand that you and your son are partners in farming.'' ''Yes,'' he said; ''when my son became of age, he wanted to go in business for himself, so we talked the matter over, and nothing offered a better salary than a partnership on the farm. We had worked together in poultry and dairy farming, and he knew about the work and had a natural taste for it. He wanted to be a good farmer and settle down at home, and I needed him. So the partnership was formed, my son giving me his note for a one-half interest in the property.''

These were certainly ideal condition under which to form a family partnership in the ownership and management of a farm. Are there not many instances where members of a family would be mutually benefited by such partnerships? When the sons become of age they may become dissatisfied in working without stated wages, or knowing what their prospects are if they stay on the farm. One case I have in mind is that of a young man who worked for his father after he became of age. His father wanted to keep possession of the farm and manage it, but the son, being more progressive in his methods, wanted to practice them on his own farm, and he did not know what he could depend upon in the settlement of the estate if he remained at home. He bought a farm with but little capital, and his debt is a grevious burden. His father was left alone in his old age, hiring his work done by men who had no interest in it. The farm and herd deteriorated until the income was small, and the separation of father and son proved ruinous to both. This case is typical of very many. Because I see valuable lessons for families who together could very successfully work their problems, I want to go more into the details of the case of J. A. Vandervort & Son, who were similarly placed as the father and son I have mentioned.

I thought it worth my while to drive to Mountain View Farm and see what the Vandervorts have accomplished working together harmoniously. Turning off the main highway, I took a cross-mountain road that brought me to the farm, and saw the fine landscape view of the valley below—hence the name, Mountain View Farm. The cozy, home-like, comfortable farm house is shown by the illustration. Back of the house a few rods is seen the large modern dairy barn. Just across the driveway, at the back of the house, is the hennery. Cows and hens are the specialty of the Vandervorts. The son, while giving the most of his time to dairy farming, takes care of 300 purebred hens, and few poultrymen receive as much for their time spent with poultry as Mr. Vandervort. We sat down for a hen talk, and he told me the story of his hen business. ''Ten years ago,'' he said, ''I paid $10 for a setting of white Leghorn eggs from one of the best strains in the country. From these I got three chicks that started me in the purebred business. Now, I don't buy eggs, but fowls, when I want a new breed or a new strain of a breed. We keep now, besides the White and Brown Leghorns, Silver Pencil, Columbia, and Partridge Wyandottes, and Guineas. The guineas scare the hawks and are marketable.'' ''How do you manage to keep the different breeds separate, and still give them sufficient range in summer to keep them in the best condition,'' I asked. ''The different breeds are confined in yards, but the hens in each yard are given the range of the farm on alternate days. In this way they get exercise, and grass and insects, etc.'' ''You find time to feed and care for the hens besides doing your farm work?'' ''I don't spend much time feeding laying hens. A dry mash, the larger part of which is wheat bran, also grit and shells are all the time kept in hoppers. I feed different kinds of whole grain in the morning on the floor and cover with litter, and generally corn at night. In the winter I feed some cooked meat and such green food as cabbages and beets. Alfalfa is the best green food for hens in summer.''

''What part of your eggs are you able to sell for hatching?'' I asked. ''The most of them are sold for hatching during the season which is from March to June. The other months the eggs are sold in New York City. Breeding stock is also sold from June until the next March.'' ''How do you hatch and raise chicks?'' ''I always hatch with hens when they will set at the right time, but sometimes use an incubator I want hens to take care of the chicks, and I think I get more show birds. We work for both egg production and conformation to standard of points. Exhibiting at poultry shows is our way of advertising.'' The balance sheet I will present further along will show a net profit in this kind of poultry management.

FARM RESIDENCE OF A. E. VANDERVORT, DELAWARE CO., N. Y.

From the senior Vandervort I obtained data about their dairy farming. There are 175 acres of land in the farm, 150 of which is cleared land used for farming purposes. It is an upland farm, and much of the soil is underlaid by impervious clay, so it is not well adapted to frequent plowing unless underdrained, but it is a grass farm. Grass and an abundance of good spring water make possible successful dairying. In the year from which I obtained records, 26 cows were kept. The larger number were purebred Holsteins.

I asked: ''What is your winter ration for cows giving milk?''

''I have no fixed ration, but feed a cow according to her capacity to give milk. The amount of grain in winter varies from 8 to 15 pounds per day. I mix the grain ration to balance the roughage, which is corn ensilage and mixed hay. I feed considerable cottonseed and gluten meal, and some wheat feeds. In summer the ration is good pasture, and sometimes I feed a little hominy meal.''

''Do you practice the usual rotation in this locality, of corn, grain, and clover and timothy, two years or more?''

''Yes, as far as practicable on my soil.''

The Vandervorts, unlike most farmers, keep farm accounts in a business-like way, and the following statements may be considered authentic:

Receipts	
Returns from milk sold from 26 cows, at $126 per cow	$3,276.00
Surplus stock sold	365.00
Eggs and poultry sold at fancy prices....	1,543.19
Value of fruit and vegetables	292.30
Pork	100.00
Fuel from timber lot........	100.00
Total	$5,676.49
Expenses	
Feed bill	$2,000.00
Labor item	360.00
Taxes and insurance	50.00
Incidentals	100.00
Interest on investment......	300.00
Total	$2,810.00
Labor income	$2,866.49

This amount is the labor income of father and son working the farm in partnership, and shows the result of working intelligently together, and they are very different from those I have cited when the father and son could not work together. Even if Mr. Vandervort had hired his son, very probably they would have been less successful. With most people a sense of ownership increases interest, and enables them to do better work.

Mr. Vandervort said to me, ''My son wanted to go into business. It was a question whether he should leave the farm or stay on it. After careful consideration of the matter, he decided that his prospects were better if he went into partnership with me. It has certainly proved to be a good thing for both of us.''

It is quite evident that the son has fared much better than if he had gone into any business alone with small capital, or working for a salary. Right here is the point in this article. Young man, on the farm, if you are ready to go into business, right where you are is probably your work and your opportunity, if you can like farming. For the father, I will say that it is the only right way for you to do to take your son or sons into partnership, and don't be too conservative. Don't hold the boy down in the old ruts. Encourage him to study and practice modern progressive methods. The partnership story is only one part of the story of the Vandervort firm. They read all the leading farm papers, keep in close touch with the work of state agricultural institutions. They are students of agriculture. In a word, they see the same principles and right methods. Partnership on the farm in the practice of scientific agriculture brings success.—W. H. Jenkins, Delaware Co., N. Y.

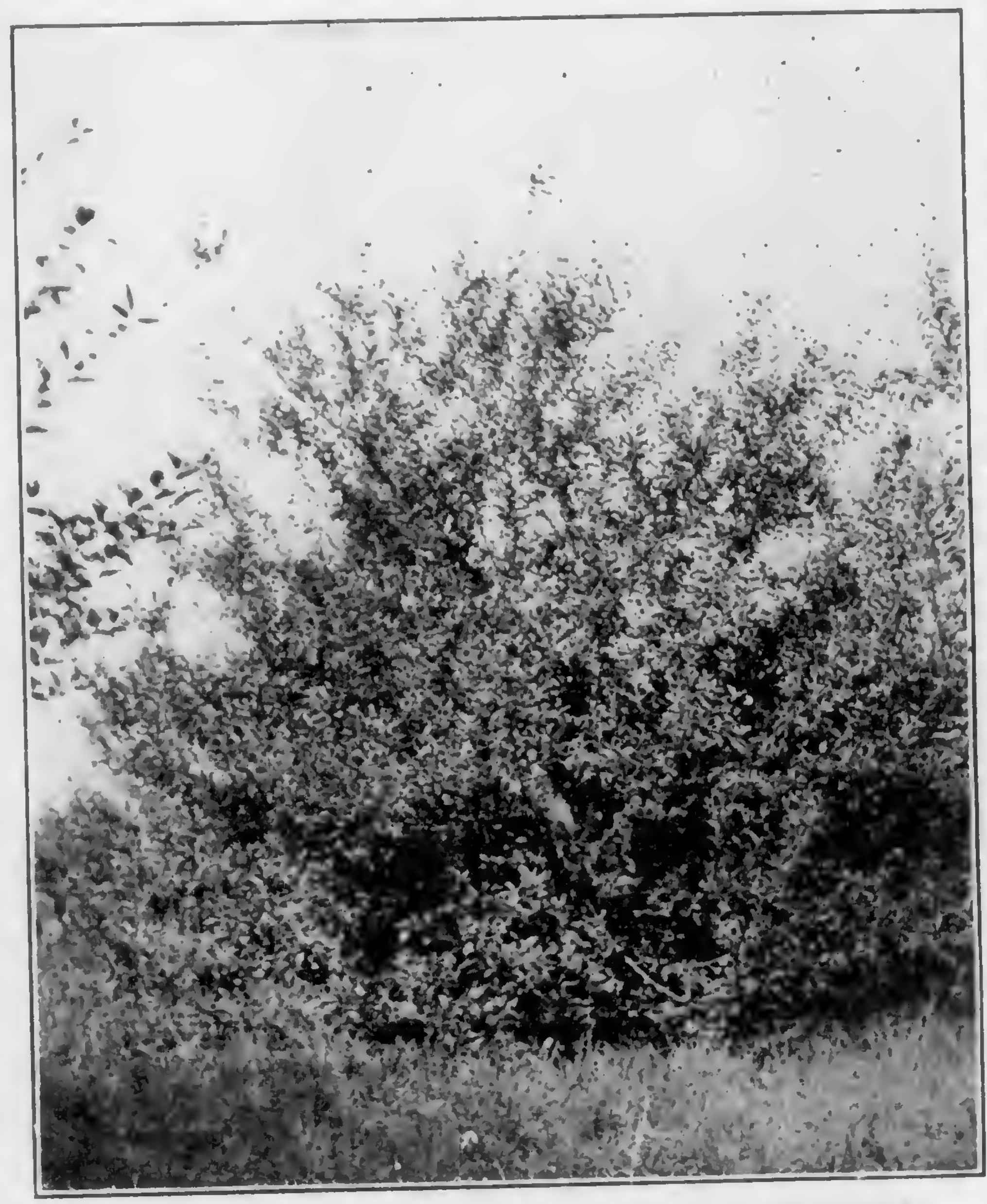
HYDRATED LIME

Not very long ago we saw a farmer applying hydrated lime to his field. We wish that we could make money so fast that we could afford to buy and pay freight on water. That was what this farmer was doing. Hydrated lime simply saves the lazy man the trouble of slaking his stone lime, and is no more efficient.

Horticulture

THE FRUIT GROWERS' ASSOCIATION OF ADAMS COUNTY MEETS

The eighth annual convention of the Fruit Growers' Association of Adams County was held at Bendersville, Adams County, December 18, 19 and 20, and was an unqualified success from every standpoint. This association was organized in 1903, since which time consistent growth and able leadership have made it one of the strongest county organizations in the state. In the heart of a great fruit growing section, and in one of the most delightful counties in the state, the Association has come to include many prominent fruit growers, and is a strong factor in giving Adams County fruit the wide reputation which it enjoys. Year by year this organization has increased in strength, and year by year the annual conventions have been more interesting and worth while; but this year's meeting surpassed any that have preceded it. The program was a strong one, including horticulturists of wide reputation from this and other states, and was enjoyed by large audiences of local farmers and fruit growers.



A LOW HEADED BLACK TWIG IN GOOD BEARING CONDITION.

During the opening session on Wednesday afternoon, Prof. F. N. Fagan, of State College, presented a very complete discussion of peach culture and the future possibilities of this fruit. This talk was followed by one on spraying, by Mr. C. E. Bassett, a large and prominent peach grower of Michigan. The evening session was devoted to a very interesting talk by Mr. H. W. Collingwood, of the Rural New Yorker. Thursday morning the following subjects were discussed, "The Chestnut Blight Disease," by Kelly E. Rockey; "Winter Injuries to Fruit Trees," by Prof. M. A. Blake, of New Jersey, and the "Use of Fertilizers on Apples," by Dr. J. P. Stewart.

Picking and Packing Peaches.

During the afternoon Professor Blake gave an illustrated talk on "Peach Packing and Packages." This subject was unusually well discussed and the very good slides which were used made the subject more interesting. Professor Blake had visited the large orchards of Mr. Hale, in Georgia, and much of his talk was based on Mr. Hale's methods. In the Hale orchards, picking is done on the ticket system, each picker placing a numbered ticket in the basket before it goes to the packer. This enables the superintendent to keep a check on the work of each individual, and guards against careless, ignorant or indifferent picking. The boxes are loaded in the cars packed four rows high, with about a two-inch space between rows to provide ventilation around each box. This expensive method of marketing was contrasted with New Jersey conditions, where the markets are often local, or at least are so near that freight problems are not serious. Professor Blake has found that the practice of wrapping each peach is very doubtful from a commercial standpoint. He has found, however, that for a local market the use of some greens in the basket is a profitable investment of time.

Grapes

The subject of grapes was discussed by Mr. L. S. Tenny, manager of the Tenny Farms Company, New York. Mr. Tenny states that grapes may be grown successfully upon any soil, provided it is well drained and reasonably fertile. There is a big chance for further breeding to establish more commercial varieties. While there are a great many varieties of grapes, there are only two which are grown to any extent in this climate, namely, Concord and Niagara. Concords are easy to raise and are money makers, while Niagaras run a close second. Other good varieties are: Delaware, Catawba, and Salem in the Rogers group, altho most of the varieties in the group are subject to diseases.

Planting is done in the spring, rows eight feet apart and deep in the rows. Two-year old stock is used. For the first two years stakes are used, after which a two or three wire trellis is erected. The system of training is a reverse of the Kniffin system. A main trunk is trained up to the top wire, and two lateral canes are grown from the trunk at each wire, making four, when a two-wire trellis is used. From each of these lateral canes, two vertical canes are grown, which are annual and bear the fruit. Pruning consists of cutting away these vertical canes which have borne the fruit, leaving two others on each lateral, which have been grown during the summer. Thus at all times there are eight bearing canes on each vine. Summer pruning is necessary, and consists of rubbing off all superfluous buds which start growth. The vineyard must be cultivated and sown to a cover crop, just as any other orchard should be.

Cover Crops

Dr. Jacob P. Lipman, Director of the New Jersey Station, gave a most interesting talk on cover crops. He pointed out that there is some misunderstanding in the terms cover crop, green manure and catch crop. The latter may be used for green manure, or may be harvested, and is grown when the ground is idle or between other crops. A green manure crop is grown for the purpose of supplying humus, or to take the place of stable manure, while a cover crop is one which covers the ground to prevent erosion, add humus or provide hay. From a study of foreign soils, it has been learned that from the virgin state they usually deteriorate to a point where production is low; then they increase and are built up to produce more than the virgin soil did. From these and other studies it has been found that soils deteriorate because they lose their available plant food, and also because the texture of the soil changes and deteriorates. Nitrogen is more often deficient, phosphoric acid next, and often lime is wanting.

Why is it that soils left to themselves improve? Also why do forest soils, with the trees annually removing tons of plant food, increase in fertility? The reason for both of these changes is that the roots supply the surface soil with food elements which they find in the sub-soil. Nitrogen and phosphoric acid are found in greater supply in the surface soil, while potash and lime are in greater abundance in the sub-soil. When ground is allowed to rest, the weeds do this work, and hence the gains are greater than the losses and the land improves. Hence cover crops help the gains to be greater than the losses. This soil improvement can not be brought about by commercial fertilizers alone; but these must be used in connection with cover crops. Besides the above mentioned advantages, cover crops also prevent the washing away of soluble foods, and will increase the water holding content of the soil, especially in regions where the snowfall is great.

It is a significant fact that chemical analyses do not show the variations in food supply of soils that the crops growing upon these soils do. This is probably due to a difference in quality of food, rather than quantity. Hence an important question is how to change the quality of the available food, or make it more available. The cheapest way to bring about such changes is thru the action of certain soil bacteria; in other words, fermentation, and the cheapest way to bring about this fermentation is by the use of cover crops. One point that must be guarded against in the use of cover crops is a possible lack of phosphoric acid and potash. Where such a deficiency exists, the cover crop will compete with any other crop for these two elements, resulting in a lack of proper nourishment in both.

The following plants are best for leguminous cover crops in this locality: winter vetch, alfalfa, clover, cowpeas, soy beans, Canada field peas. Alfalfa should be used only where the soil has been inoculated, and for this reason vetch is probably better, since it is very hardy and does not need so much inoculation, besides adding from 15 to 100 lbs. of nitrogen to the soil per acre. Cowpeas and soy beans are good for early sowing, altho cowpeas also need some inoculation, and the addition of nitrogen is not as large as in the case of vetch or alfalfa. In sowing cover crops, it is essential that there be a good seed bed, since the crop must make its full growth in order to be efficient.

Some Problems of the Apple Grower

This subject was discussed by Mr. L. S. Tenny, who has had wide experience in fruit work. He said that the fashions in fruit are just as variable as in many other things, and for this reason the question of varieties is a very important and complex one for the man who is just starting his orchard. A few years ago in New York State Wealthy, Wagener and other newer varieties were being planted, while today popular choice has gone back to the older varieties, such as King, Baldwin, Northern Spy, etc. The distance between the trees is also being increased, 40 feet being considered a minimum. Altho there are many theoretical reasons why peaches should not be used as fillers with apples, Mr. Tenny has had marked success with this arrangement, and does not hesitate to recommend it.

Pruning is done according to a vase-shaped plan, leaving an open center, with fruit spurs over the entire surface of the tree, inside and out. There are four main branches that make the head of the tree. The sod mulch scheme is not a success. Cultivation must be given very frequently, in order to conserve the soil moisture. For a cover crop, Mr. Tenny often uses weeds, except where a legume is wanted, in which case a mixture of medium and mammoth clovers is used with great success.

It is being noticed that under this system of intensive and frequent cultivation the fruit is getting paler in color, and a great problem which presents itself is the discovery of a system by which the cultivation is as intensive and yet the color is increased. One New York grower cultivates in the early summer every four days for five or six weeks, and then sows a cover crop, thus shading the ground during dry weather. This is simply a scheme to do away with the frequent cultivation and yet hold the soil moisture. The trouble with this system is that too much nitrogen is apt to be the result, followed by serious outbreaks of fire blight and other fungous diseases. The great fruit problem today is to get better fruit, rather than more fruit, and to improve marketing methods.

Alfalfa

The good work in alfalfa which has been done in New Jersey made Dr. Lipman's talk on this subject especially interesting. He pointed out that, altho this crop is new in many sections of our country, it is, in point of history, very old. The Spaniards brought it to South America, from where it worked in western United States east.

Alfalfa has the greatest power of increasing soil nitrogen of any crop known. On the New Jersey Experimental Farms an average of five tons per acre is grown. When it is considered that one ton contains from 50 to 60 lbs. of nitrogen, we can see what a tremendous nitrogen gatherer this plant is. One ton of good alfalfa hay is equal to one ton of wheat bran, hence it is invaluable where any stock is kept.

Any type of soil will grow alfalfa, provided certain elements are present. It must be well aerated, the water table must be low, and most important of all, it must not be acid. Hence lime is of great importance, and it must be in sufficient quantity to not only keep the plants over the first year, but over the entire life of the crop. Bacteria must also be present, and more failures are due to lack of inoculation than any other one point. A legume without nodules is not a normal plant, and when in this state they derive their nitrogen from the soil just as any other plant does.

A clean seed bed is necessary, for weeds are the natural enemy of alfalfa; hence it should not be sown after sod. The heavier the soil, the more lime is needed. On light soils 20 to 25 bushels would be a good application, while 35 to 40 bushels should be added to very heavy soils. Barnyard manure is a good fertilizer for alfalfa, but on account of the amount of weed seeds which it carries, it is not recommended. Acid phosphate and muriate of potash, 300 lbs. to 100 lbs., applied at the rate of 400 lbs. per acre, makes an excellent fertilizer under normal conditions. Many growers apply some nitrate of soda during the early stages of growth, but this is a mistake, and no nitrogenous fertilizer need be applied at any time.

There are two ways to inoculate the soil, either by sowing soil from an alfalfa field (about 300 lbs. per acre), or by making a culture of the bacteria. This can be easily made and gives good results. In order to prepare it, make a thin paste of soil from an alfalfa field. Make a mixture of sugar and phosphate of magnesium made sterile by boiling. Pass a needle thru a flame, in order to sterilize it, and dip it first into the mud and then into the sugar solution. Keep in a warm room until the bacteria begin to develop in colonies, after which they can be mixed with water. Seed treated with this water will be inoculated as well as by the use of inoculated soil. Poor seed is one of the greatest sources of failure. All seed should be tested and any that show a lower germination percentage than 80 should be discarded.

Lessons From the Western Fruit Grower

Mr. C. E. Bassett has spent considerable time among the western fruit growers, studying their conditions and methods. This work has given Mr. Bassett many new ideas which are applicable to eastern conditions. The western fruit grower is known to be an enormous advertiser, and while this is true, yet he has the goods of quality to advertise, and he can back his claims up. In spite of the fact that in the east better fruit can be grown and is grown, the western men, by their organization and advertising, have gotten a high reputation on an article which is inferior to our own product. One great change that must be made here is to reduce the acreage and develop a more intensive system of growing. The individual tree must receive more care than it has in the past.

The reputation of the western fruit was made on color. There are no clouds in that country, hence they get a maximum amount of sunshine, and the trees are pruned low and open, so that this great amount of sunshine may be taken advantage of. Pruning is being done all the time, whenever needed, rather than being confined to definite seasons in the year. Buds are pruned instead of limbs, thus saving much labor and the energy which is necessary to make any amount of wood. The fruit is also thinned much more severely and systematically than in our eastern orchards. Men are constantly going thru, discarding any inferior specimens and removing superfluous buds. It does not take any more time to thin in June than to pick and discard at harvest time, and the results are wonderfully better.

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There's a lot of wormy, gnarled, spotted fruit on the market every year, but the perfect fruit doesn't compete with this. Fancy fruit has its own price, and the supply never is equal to the demand. You can make $200 to $500 an acre with apples if you grow a fancy crop—and the dealer will come to you. He knows sprayed fruit is sound and unsprayed fruit is pretty sure to be wormy.

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The Dairy

A MOONSHINE OLEO PLANT

A "moonshine" oleo plant was discovered on December 20, in an isolated farm house at Lathams, N. Y., about 10 miles from Albany. Agents of the Federal Government made the raid on the plant and about 800 pounds of oleo, with quantities of coloring fluid and apparatus for mixing the color were seized. James Upritchard and William Hickey were arrested. Upritchard confessed that he had been making colored oleo for six months and selling it as butter. He says he sold 900 pounds in 11 days, but it is believed by the authorities that the estimate is far too small. There is evidence that more than 11,000 pounds of oleo in its natural color have been received by Upritchard since October 1.

The credit for uncovering the "moonshine" plant is due to the efforts of E. F. Burke, chief of the bureau of dairy products of the state department of agriculture. For several months he and his assistants have been working on clues that finally led to the discovery of the plant. The state and federal departments co-operated in the arrests and seizure of the oleo. The state law applying to the case permits only a single fine of $100, while under the federal law parties making colored oleo are subject to a license fee of $600, and are liable to a tax of six cents a pound for the oleo colored. The officials say that the output of this plant has been sold in large quantities in neighboring cities at the market price of good butter.

In a confession made by Upritchard immediately after his arrest he said that he had been engaged in coloring oleo for the past six months, and that he had sold the same to customers for the past three months as butter. He told where he had procured the white oleo, and said that he paid 19 cents a pound for it. He turned over to the authorities the names and addresses of those to whom he had sold the "butter," and said that at the time of his arrest he had on that day received 900 pounds of white oleo, which he intended to color and sell as butter. About two years ago a similar "plant" was discovered near Cohoes, N. Y., and another in Troy. The one in the latter city was put out of business, which was quite extensive, as it operated a chain of stores, the Federal Government seizing the property and punishing the offenders. It is believed that Upritchard was an employe of this concern and, knowing the business and the profit in it, decided to go into business on his own hook.—New Yorker.

NEW YORK STATE DAIRYMAN'S ASSOCIATION

The 36th annual meeting of the New York State Dairyman's Association, held in Syracuse, was one of the best in its history. The attendance was larger than in several years, and the addresses were practical to the average dairy farmer in working out his problems. E. H. Dollar, who is known as one of the most successful dairy farmers and breeders of purebred cattle in the world, was re-elected president, and W. E. Griffith, a well-known dairyman at Madrid, N. Y., was re-elected secretary. Syracuse was selected for the place of meeting next year, as being the most central city in the state that will accommodate all the dairymen. There is a good prospect that the convention will be held permanently in Syracuse.

There were some innovations at this meeting that doubtless increased the interest and attracted the larger attendance this year. One of these was the contributing of purebred bull calves. E. H. Dollar, of Heuvelton, contributed a Holstein; Geo. W. Sisson, of Potsdam, a Jersey; George Converse, of Woodville, an Ayrshire, and Isaac L. Hunt, of Adams, a Brown Swiss. These were drawn by members at the convention. The admittance tickets were all numbered and a check given everyone at the armory.

Another feature at the convention was the sale of purebred cattle. Several daughters of Pontiac Korndyke Hengerveld, one of the most famous bulls in the history of the Holstein breeding industry in America, were included in the animals for sale. Sir Pontiac, as he was frequently known, was sold last spring for $2,000, but several of his daughters have been sold for figures considerably higher. The sales of cattle at this convention was considered one of the best sales of this character ever held, from the standpoint of both quality and uniform price. One hundred and forty-five head were disposed of at approximately $45,000. The next sale by the Association will be held at Syracuse, April 22-24, 1913.

The following is a condensed record of the resolutions passed:

Resolved, To support the Haugen bill, regulating the manufacture of butter and oleomargarine; that we ask that a comprehensive law be enacted requiring the branding and sale of skim cheese; to ask President-elect Wilson to appoint as Secretary of Agriculture a man whose knowledge and training are such as to give him a thoro knowledge of the great interests he is to represent; that we ask that the present law be amended so as to give the Department of Agriculture greater and more efficient jurisdiction in the matter of dairymen's barns as to sanitary conditions, etc.; that the Association appoint a committee of two to co-operate with the New York Milk Commission to confer with Commissioner Huson in the matter of bovine tuberculosis; that the Association be represented by its president and secretary at the hearing of the dairymen of the country upon the matter of the proposed oleo legislation at Washington.

FILLING THE SILOS AT THE HOME FARM, LEHIGH CO., PA.

The program was carried out as scheduled. Some quite full selections of one of the valuable addresses, "American Butter," will be published in another issue. Other addresses were: "Dairy Farming," by C. C. Lillie of Coopersville, Mich. He said that dairy farming was a business and should be conducted along the line of business principles. The dairy industry is one of the greatest in the country. One must be a successful business man in order to be a successful farmer, for the man back of the enterprise makes it a success. The greatest factor, other than the man, is the dairy cow. It is the machine thru which he markets his produce. To make dairy farming profitable, test cows and sort out the poor ones and get rid of them. The practical way to get good cows is to raise them yourself. It is largely a question of breeding. Utility is the dominant thing to breed for. Keep records and select only those who have records for good milk production for breeding purposes. Use only sires having a good pedigree. Cow testing associations are a help to the ordinary farmer. It is of great importance to raise the best crops for the dairy cow. Some alfalfa should be grown on every dairy farm. Unless you grow alfalfa or clover you can not keep up the fertility of the dairy farm. You must make the cows like you if you make a success.

Prof. Hugh G. Van Pelt, Waterloo, Iowa, delivered an address on "Feeding the Dairy Cow for Large and Economical Production." The following are a few selections: Finding human food with keeping the dairy cow profitably, is one of the problems we must solve. The economy with which she produces the milk and butter fat is one of the greatest things in favor of the dairy cow. Your success or failure depends on the material which you pass thru your factory—the dairy cow. The farmer will not succeed unless he knows what foods are required to make milk, and the elements in the different kinds of food. Study general facts and principles and put them in practice on your farm, and you will increase your production 50 percent. In his practical work of feeding, he said first doubt a statement and then prove it to be false or true. Pick out one cow before she freshens and prove your theory on this cow. Turn her dry from four to six weeks before freshening. The greatest skill in feeding is while she is resting and dry. Feed her for all the purposes for which she needs food. It will come back to you at 200 percent if you feed her well. The food should be light, cooling and digestible. Before the birth of the calf the mother should be given food rich in the elements that build up bone, blood, muscle, etc.

When it is time for the cow to freshen, feed from two to four pounds of bran, moistened with warm water, for three or four days. It is a laxative and gives sufficient nutriment. Give close attention for first 48 hours. Do not milk her out too much. If milk fever appears, use the air pump. The hardest time to feed a cow is after calving. Good judgment is required. Testing a cow for 30 or 40 days after freshening will determine the efficiency of your machine. Begin with three or four pounds of grain a day. Next day weigh the milk. Continue increasing grain one-half pound every other day, until the cow does not respond with increased milk production. Too much feed is worse than wasted. The ration must be gradually increased or decreased. Increase production as long as you can do it profitably. Different cows require different feeding. Study the individual cow.

Dr. E. C. North, of New York City, gave an illustrated lecture on "Clean Milk at Low Cost." In speaking of the development of his milk system, he said that in old barns on his premises, after a little whitewashing, he succeeded in producing milk containing exceedingly small numbers of bacteria by the practice of a system which he had devised. Afterward he became a member of the New York Milk Committee. This committee organized a small milk Company, called the New York Dairy Demonstration Company, for the purpose of experimenting on a large scale with the North System. For two years this company has operated a small milk shipping station at Homer, N. Y., and has produced milk in accordance with this system. All the sanitary operations have been conducted under his personal supervision. They began with three dairy farms, and now they receive milk from 70 dairy farms. The object of his system is to produce clean milk at low cost. The backbone of the system is the principle of centralization. The farmers all bring their milk to a central station, which performs all the functions of a dairy house for each of the different farmers. The milk is all shipped from this station.

Little additional expense at the dairy farms is necessary, facilities for cooling the milk, more frequent whitewashings of stables, and additional care in cleaning cow stables have been the principal ones. The milking must all be done in covered pails and no strainers used. At the central plant all the farmers' milking pails and milk cans are washed, sterilized and dried. The payment to dairy farmers is based on its sanitary character, as shown by bacterial tests, and on its richness, as shown by chemical analysis, and an extra premium is paid for milk from tuberculin tested cows. He showed pictures illustrating the operations of making clean milk at their central plant.

Assistant Commissioner of Agriculture S. B. Richardson, in his address on the "Cheese Industry," gave a very interesting talk to those interested in cheese making. He said in the last 20 years there had been a decrease in the cheese making industry, and a corresponding increase in the butter industry. He then spoke on the general conditions of the work of the New York State Department of Agriculture in relation to cheese making, bearing especially on the dairy laws of the state. He said that New York State's greatest competitor in dairy products was Wisconsin. They are making excellent cheese, and their freight rates to the far West are in their favor, so the eastern butter and cheese makers must put a better product on the Pacific Coast than they make in Wisconsin, if they hold the market of the West. All cheese should be branded as to the per cent of fat, on both the box and the cheese. He spoke of the investigations conducted under Commissioner Huson, and said that many of the factories had since made substantial improvements. Sanitation plays an important part in the improvement of the quality of butter and cheese.

Interesting discussions followed each address. On the main floor of the Armory there was a large exhibit of up-to-date machinery to be used on the farm, farm supplies, and an exhibit of butter and cheese from the New York State College of Agriculture, and also from the Canton Agricultural School.—W. H. Jenkins.

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Poultry

TAR AS A POULTRY HEALTH INSURANCE

Many poultry keepers seem to have overlooked the value of tar and its many uses in the poultry yard. The writer has long found it valuable in several ways in his own yards, and from reports made to me by several Indiana poultry keepers whom I visited while on a trip thru that state this fall, I am inclined to believe it a much better practice to tar the poultry yard fence instead of whitewashing it. Particularly was I interested in the extensive use of tar by one Shelby County poultry raiser. It is several years now since this poultryman-farmer first substituted tar for whitewash thruout his plant as an aid to the general health of the flock and as an aid in combating chicken cholera especially. It has also contributed largely to the durability of the wood, proving itself a more efficient protector against storm and time than is whitewash. I shall try it on part of my yards the coming spring. But it is in the poultry house itself that the value of tar is the greatest, serving as it does as a disinfectant, a vermin destroyer and a tonic. I long ago found a small lump of it in the drinking water to be very beneficial to fowls of all ages, but especially with capons and old fowls that are being confined and fed heavily to condition them for market.

SILVER PENCILED WYANDOTTE COCK.
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Every year we hear of a few cases of chicken cholera in scattered sections thruout the East, but it is not as common with us as it seemingly is in the midland, where it spreads to the proportions of an epidemic some years. Altho there are numerous commercial "remedies," so called, for fowl cholera, it would be well for all poultry keepers whose vicinity has been visited by fowl cholera in the past year or two, to take a lesson from this Shelby County farmer-poultryman as to the value of tar in safeguarding the flock from this disease—even tho it be present in flocks near-by.

"When I learn of cholera making its appearance in my neighborhood," he said, "I first give the poultry house and all coops and any corners about the farm buildings that the poultry seem inclined to frequent a thoro cleaning out. Then an application of warm thin tar is made at all joints, crevices, cracks, etc., which, in the case of the poultry house and coops, is followed by a light painting of tar. The tar drives away or absorbs all taint of the disease besides making the premises otherwise wholesome. The smell is not offensive —I rather like the odor—but to all kinds of vermin it is very repulsive and those that it does not kill will lose no time in decamping after the tar has been applied; while those that are caught in the cracks and joints and cannot get away are killed by the tar. I've not been troubled with vermin nor had any cholera in my flock for several years, but the last time it did visit me, by resorting to tarring everything about the poultry house and the barns (my fowls have free range, except in seeding time), and removing the affected birds, I soon got rid of it. Cholera struck this neighborhood hard again only last year, and my nearest neighbors on each side of me had it in their flocks, while mine was unaffected. One of these neighbors resorted to tarring his poultry-house and removing the affected birds as I had done, and saved over half his flock; but the other neighbor depended on patent cholera remedies and a whitewashing of his poultry house and lost nearly all his fowls with the disease."

This is pretty strong and convincing evidence of the value of tar in fighting fowl cholera. Plainly the great value of tar in the poultry yard has been too long overlooked by many of these midland poultry raisers, and I think, from my own experience and observation, that the same is true in the East also—especially among the farmer-poultrymen whose barn basement or other farm building also serves as a fowl house, the many joints and crevases about which afford convenient rallying places for all kinds of vermin as well as fertile breeding quarters for various diseases.—Clark Westford, Schenectady Co., N. Y.

THE GUINEA AS A MOTHER

We have been told time after time that the guinea hen is not a good mother for her own young. She is said to be incapable, generally, in that capacity, and that it is not advisable to allow her to hatch eggs. I have always doubted the truthfulness of this theory, since it is not natural for any animal to be incompetent to care for its young.

Last September we had a guinea hen come off with a flock of young ones and we just let them run about, without giving them any particular care. The old bird seemed to understand the needs of her young all right, and the young ones understood every move of the mother. Upon the slightest alarm the young ones would all hide like quail. The fall was not very favorable, as there were several heavy rains while the guineas were young, but the mother guinea succeeded in raising 8 out of a batch of 12, and I never have seen young guineas grow faster.

SILVER PENCILED WYANDOTTE HEN.

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THE GOOD HOG

The good hog is the one, regardless of his breed connections, that is—I was going to say, a gentleman. I might say a gentleman after his kind, in that he is well bred, thinking no evil, knowing his place and keeping it, being contented with his lot, doing his work faithfully and uncomplainingly, following out his destiny gracefully.

Dropping comparisons that may be odious to either of the parties of the first or second part, the good hog is one that is well born, and therefore ready to thrive as soon as he feels his feet under him, and keeps on thriving and turning farm feeds into hog carcass; a cheap producer of a wholesome, nutritious human food. This good hog is always ready for market whenever his owner chooses to cash him in. When we speak of the good hog, we mean to have him stand out from the other hogs that are not good, for there are droves of thousands of such thru no fault of their own, but thru the fault or ignorance or stinginess or poverty of their owners.

This would suggest that the good hog must have a good man somewhere in his pedigree, and really, wherever we come across poor hogs or cows or horses, poor farms or farming, isn't it a fact that, tracing effect to cause, we will find poor men? Of course, not poor in money matters, but poor in efficiency or equipment.

The well-bred, properly-born pig, fed right, grows right, as sparks fly upward; but no matter how well he may be bred and born, he is under a handicap if not rightly fed, so that should he fail in his well doing destiny his owner may reflect that it was not the fault but misfortune of the hog. As a concrete example, I have seen hogs that were finely bred but insufficiently or improperly fed that were a loss and disappointment all the days of their lives, for youth is the golden age of the hog, and if it is not improved upon, no after care can bring him to the full measure of his intended usefulness.

On the other hand, I have seen pigs entirely guiltless of pedigree or fictitiously high-priced ancestors, born of a long-nosed, slab-sided mother, out behind an old log or in a bunch of bushes, that in the hands of a good feeder grew and grunted into things of beautiful profit. All of which does not prove that the well-bred pig did not carry the more potential profit, or that the bush whacker is the hog for the farmer; but it does prove that evil communications can spoil even a good pig; that a hog is known by the company he keeps.

It proves also that there are some men born to undo things, and that there are other men who always seem able to make the best of even the worst. To my mind, the good hog is the purebred one, for if his purity of breeding has not added to his financial value, why bother about heredity, selection, registry and all those things that go along with advanced breeding?

The well-bred hog is one that is built for usefulness and has that build bred into him, so we may be reasonably sure it will be handed down to his offspring from generation to generation. We assume, of course, that a hog's usefulness as a mere market proposition lies in his good health and ability to grow quickly, consume much feed economically, and make the quickest and best returns on the market. As far as I can look into the hog question, that is about all we can expect. We do not want to keep him around the place because we have become friendly with him and enjoy his company, but because he represents a profit to us.

Once my little boy stood out against my having an "early" fine young Berkshire butchered, "'Cause I love that pig!" But we older boys love our pigs only for the profits they will make.

The good boar is one that has gentleness, strength and prepotency. And really, prepotency is the most valuable element in the character of the purebred sire. It means that he has inherited all the good he shows and of which he is capable; that that good has been so firmly established in him that he is sure to impress his offspring with it. That means pedigree in that animal. I know that there are plenty of farmers who "hoot" at pedigree, yet know there are some sires that always get good, uniform, profitable litters, while there are other sires that produce medium or mediocre pigs. The sire that adds $5 premium quality to each of his litters is easily worth $50 more than the other—a very material understanding of and argument for pedigree. That is a good sire.

A good sow is one mated for that good sire. She has not been bred too early. She is quiet, industrious, motherly, strong and prolific, bringing medium-sized litters of good, active pigs, rather than large litters of inferior ones. She is one that will do the same thing twice a year and for a number of years. That is her pedigree, and it has gold in it for her owner, if he be wise enough to properly appreciate her and treat her as a gentleman should treat a multiple mother. That is, briefly, a good dam. She and the good prepotent sire are the kind that produce the good pigs that are able to make hogs of themselves expeditiously—the maximum meat on the minimum feed.—W. F. McSparran, Lancaster Co., Pa.

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The figures in the Third column give the price at which other publications can be added if more than one is wanted in combination with Pennsylvania Farmer.

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NAME OF PUBLICATION	1	2	3
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Jersey Bulletin	1 00	1 40	95
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Market Growers Journal	1 00	1 10	75
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Poultry Keeper	50	85	45
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Boys Magazine	1 00	1 20	80
Boys' World	50	1 00	40
Camp and Trail	1 50	1 80	1 40
Century Magazine	4 00	4 10	3 75
Christian Endeavor World	1 50	1 85	1 40
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Christian Standard	1 50	1 85	1 40
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Delineator	1 50	1 60	1 30
Designer	75	1 10	70
Etude	1 50	1 50	1 15
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Woman's Magazine	75	1 10	65
Woman's World	25	60	30
World's Work	3 00	2 30	1 90
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PENNSYLVANIA FARMER
AGRICULTURE THE KEYSTONE OF NATIONAL PROSPERITY
ESTABLISHED 1880 PUBLISHED WEEKLY

Established 1880. Published Every Saturday.
Entered as second-class matter at the postoffice at Philadelphia, Penna.

The Lawrence Publishing Co., Proprietors
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214-216-218 South 12th St., Philadelphia, Pa.

Branch Offices For Advertising Only
Cleveland, O., 1011-1015 Oregon Ave.
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One Year	52	copies to one person	$0.50
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15 cents per agate-line measurement, or $2.10 per inch (14 lines per inch) each insertion.

No advertisement inserted for less than 45 cents per insertion.

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Philadelphia, Pa., January 4, 1913.

DUPLICATION OF WORK

The expansion in agricultural educational and development work now in progress calls for careful organization to insure certain and permanent benefits. With plans for increased state and Federal appropriations for new lines of work and for strengthening the old, there must be a perfect system of state and Federal machinery to handle these funds. The success of the pending plans depends upon perfect building from the start, and many states, including Pennsylvania, are now facing the problem of making a definite division of the duties of their various agricultural branches. In the natural development of state supervision of agriculture most states have delegated the work to a state department of agriculture, an agricultural college and an experiment station. Most states have succeeded in keeping the duties and functions of these three departments fairly definite, and have avoided any duplication of effort or overlapping of interests. The agricultural college is recognized as the educational branch, having charge of all of the instructional work. The experiment station is the natural and logical experimental branch, and should have charge of all experimental work. The state department of agriculture is the administrative or police branch, having in charge the enforcement of all state laws relating to agriculture, such as feed and fertilizer inspection, insect and plant disease control, etc. The notable exception to this general plan in Pennsylvania, as in many other states, has been the placing of farmers' institute work, which is mainly educational, under the supervision of the department of agriculture. There appeared to be good reason for this exception when it was first inaugurated, as college-trained men with sufficient practical experience to serve as institute instructors were not available, and the state department was considered to be in better position to select the men and supervise their work. The practice has given very good satisfaction generally, particularly in this state. The greatest need now, however, is to keep the work of the three departments distinct and separate and avoid any duplication of effort. The farm demonstrators, local demonstration or experimental farms, and county experts are soon to be added to the list of state agencies. It is important that the work of these agencies be definitely outlined at the start, and placed under the state department having that particular class of work in charge; above all, it is important that all of the work of one kind be placed under the supervision of one department, and that all of the funds available for that work be used by one department for the work. By splitting up responsibility and dividing funds to care for experimental work, or educational work or demonstration work under two or more heads, there will not only be a waste of effort and money, but the actual benefits of the work will be greatly retarded. This is a business policy for the state authorities to settle, and it should be settled definitely and for all time before the new work is taken up. We are to have state control of agricultural development. Let there be sufficient business system in that control to make it efficient and economical.

THE TOXIN THEORY AGAIN

A few years ago, when the Bureau of Soils at Washington put forth its "Toxin Theory," it was laughed at by many for giving rise to a wild and preposterous theory. The doctrines of this theory were so much at discord with the popular and accepted beliefs on plant growth and fertilization that they were at once set aside as being the product of a theorist's brain, wholly impracticable and absurd, and yet the results which have been gotten in the recent efforts to manufacture living tissue in the laboratory again present this toxin theory in a way which demands further consideration and study. From careful and exhaustive experiments at Washington, plants were found to exude, exhale, or in some way throw out from the roots certain substances which were proven to be toxins or poisons. Furthermore, it was found that these toxins were deadly to all plants, but more especially to plants of the same species, from which it was concluded that the chief value of crop rotation was to follow one plant with another so that each might be able to resist the toxins of the preceding plant better than if they were of the same species. Again, it was concluded that the chief value of fertilizers is to neutralize these soil poisons, rather than for any food value that they might have. No soil is deficient in plant food, and the amount which we apply as fertilizers is infinitesimal as compared to that which is already in the soil. All of these theories sound thoroly reasonable and practical, especially so since they have been able to actually isolate certain of these poisons, but such doctrines are so entirely opposite our present orthodox theories that they, of necessity, must be expected to be received incredulously. But let us look at the results of these animal tissue experiments. A cell was taken as the starting point and was submitted to plasma or a growing medium, together with a temperature corresponding to body heat. This cell reproduced itself and gave rise to similar living cells, which in turn multiplied until living tissue was produced. This tissue was seen to go thru a brief cycle of life, closely resembling the span from childhood to old age, except that it occurred within a few days. It was further noticed that the tissue excreted certain toxins, which gradually retarded further development. When the tissue was washed in an especially prepared bath, and these toxins removed, the cells were rejuvenated and active normal growth continued for another cycle, at the end of which time another bath was necessary. Here is a striking resemblance in basic principle between these results and the "Toxin Theory," and makes necessary the further and closer study of that theory before, in any justice, it can be laid aside as absurd and worthless. If, in later years it be proven to be correct in its theory, then the entire practice of plant fertilization must be changed. It holds forth the possibility of neutralizing these soil toxins with materials worth two or three dollars a ton rather than with expensive and complex fertilizers.

FARM DEMONSTRATORS

The establishment of county farm bureaus, with a local demonstrator under the supervision of the state college of agriculture is proving one of the most popular of recent agricultural development plans. The project is a new one, yet it has been taken up with more than ordinary enthusiasm in many sections, and early results are very promising. There are six such farm bureaus in Pennsylvania, twenty in New York State and four in New Jersey. Many of these have been established thru the co-operation of local boards of trade or other local organizations with the state college, and the interests back of them are prepared to give them plenty of opportunity to demonstrate their value. Others have been established with the expectation that the Federal Government would carry thru the proposed plan of bearing half the expense of such bureaus. This plan was proposed in the Lever agricultural extension bill which passed the House in the last session of Congress. The bill was reported out favorably in the Senate on December 14, and is now awaiting action in that body. In brief, it provides for a Federal appropriation to bear half the expense of such county bureaus, apportioned among the various states to meet the amounts appropriated by the states for such work. Next to the land grant act, it provides for the most advanced step ever taken by the general government in the interests of agricultural education and demonstration. It is important that the Senate act at once on the measure. If passed at once, the state legislatures of the states interested may have time to provide such appropriations as they deem necessary to carry on the work. If the passage of the bill is delayed in the Senate, it will be too late for the states to take it up, and action will be delayed at least a year, and in some states two years. Farmers should urge their United States Senators to work for the immediate passage of this bill.

STATE CAPITAL NEWS

Aid for Rural Schools.—One of the most important results of the meeting of the State Educational Association in Harrisburg, during the last week, was the unanimous agreement that some system of providing aid for rural school districts should be arranged. The chief speakers of the meeting, which attracted 3,000 educators to the state capital, advocated an appropriation in aid of the school districts which are unable to provide sufficient funds to provide the required terms of school without incurring debt, and to enable them to pay the minimum salary for the teachers under the school code. The distribution of the appropriation was declared to be a matter of administration in which the state authorities could work out an equitable basis in aid of rural townships whose taxation burdens were as heavy as they can stand. Attention was called to many of the districts where the lack of resources makes liberal funds for education impossible. The payment of the $45 per month salary and the creation of a fund to pension teachers will be urged on the next legislature by a committee.

Conference on Dairy Inspection.—All of the state inspectors engaged in dairy inspection for the State Live Stock Sanitary Board have been called to meet in this city the week of January 20 for a conference with State Veterinarian C. J. Marshall regarding their work. The inspectors have been engaged for several weeks in visiting dairies which were found to be below par in the matter of sanitation and in having them corrected. Very good results have been obtained because, as a rule, the owners comply with state requirements rather than be listed for maintaining unsanitary premises. The state meat inspectors will meet here at the same time.

Highway Repair Work.—Arrangements have been made for start of work on repair and maintenance of state highways as soon as the weather breaks in the spring. About 6,000 miles of the 8,000 in the state system were gone over this year and placed in fair condition, and it is planned to complete the rest and go over the repaired sections in the spring. Emergency forces are being kept on call in case of floods, breaking of culverts and other damage, so that there will be no blocking of highways. The general appropriation bill will contain an item for repair and maintenance work for two years.

Would Prohibit Preservatives.—A bill is being prepared for the State Dairy and Food Division which would have the effect of prohibiting the use of any preservatives whatsoever in food products, repealing thereby the provision of the Act of 1909, which allows the use of a limited amount of benzoate of soda, if the fact is set forth on the label. It is said that the bill will appear early in the session. Bills to set standards for the sale of evaporated milk and restricting the sale of rotten eggs so as to meet the conditions which have sprung up in the large cities will also be presented.

Enforcing Dog Law.—Very satisfactory results are reported in the enforcement of the Act of 1911 relative to destruction of dogs. This act put the duty of killing dogs which destroy sheep on constables, and in several interior counties where the loss of sheep has been running into hundreds of dollars in recent years, a number of so-called wild dogs were killed off by constables with assistance of farmers who hunted them down.

Small Forest Fire Loss.—The forest fire loss reported by the State Department of Forestry this year is the smallest in a long time, and it is expected that when all reports are in the total acreage will be one of the lowest on record. The reason is the dampness of the spring and the close supervision by wardens and local authorities who co-operated. Very few fires followed the camping season, indicating care taken by hunters and campers.

To Enlarge Game Preserves.—The State Game Commission will ask the next legislature for an appropriation to extend the state game preserves, of which there are now five. The preserves are to be located in parts of the state not having them at present, so that the surrounding districts may be stocked with the overflow from state lands. Extensive steps to protect quail will also be undertaken this winter. The state authorities will provide grain to assist in feeding birds if the winter is severe.

Confer on Legislation.—The joint committee on legislation of the Allied Agricultural Societies of the state will meet here early in January for consideration of various measures, including the proposed commission for improvement of country life and other subjects recently brought up. The committee has arranged to make a vigorous campaign in behalf of the State Fair bill, which it is expected will receive administration endorsement.

Forfeit Charters of Water Companies.—Charters of a number of water companies which failed to exercise their franchises and supply water were taken away this week and the companies put out of existence. This is the beginning of a campaign to recover for the state the charter of all inactive water companies which fail to show any work done, and the same policy will probably be pursued during 1913 in regard to trolley and electric companies. Lists of those which have existed only on paper are now being made up.

State Orchards Proposed.—A bill, which appeared in the session of 1911, may be introduced into the next session of the General Assembly to provide for state aid or ownership of orchards, which should be used for experimental or demonstration purposes. It would be the plan to distribute the aid on a basis of farming population.—Hamilton, Harrisburg, December 30.

NEW YORK FARM NEWS

Tuberculosis Hospitals.—There are now 28 hospitals in New York State, or soon will be, where tuberculosis treatment will be given afflicted patients. Herkimer County is the latest to vote for the establishment of one. Columbia County supervisors voted the proposition down.

Farmers in Senate.—When the legislature assembles on January 1, it will be found that not more than one or two farmers, strictly speaking, have found their way into the Senate. There is a somewhat better showing in the Assembly. Senator Godfrey, who has been Master of the State Grange for several years, will be the farmers' chief representative, and he may be relied upon to do all in his power to help the farmers to needed legislation. There are two or three fruit growers in the Senate who may be expected to lend a hand in behalf of agriculture generally.

Remodel Agricultural Hall.—Commissioner Huson is authority for the statement that the old Geological Hall, which for several years has housed the State Agricultural Department, is to be remodeled for the exclusive use of the department. The geological exhibits are being removed, and the interior of the structure will be made convenient for the uses of Commissioner Huson's force. It is quite time that the needs of agriculture be thus recognized.

Basket Willows.—The largest basket willow farm in the United States, devoted exclusively to that product, is located in Wayne County. It comprises 50 acres. Every year thousands upon thousands of liliputian willows are grown here, and have been, on this farm, for a quarter century. The willow sets, 10 inches in length, are planted in the spring in rows three feet apart and one foot apart in the rows. It will require three years to reach a condition of profitable bearing, and they will continue to bear for 25 years. There is a good market for basket willows, and the wonder is that more attention is not given the business.

Forthcoming Events. — Conventions of interest to farmers and stockmen are to be held in January. At Utica, the New York State Breeders' Association will hold its annual convention on January 22 and 23. There will be a banquet on the evening of January 22. Commissioner Huson is president of the association. The State Agricultural Society's annual meeting will be held in the new Education Building, Albany, on January 13 and 14. Geo. W. Sisson, Jr., of Potsdam, is president. Early in February the State Grange will meet in Buffalo.

State Vegetable Growers.—The next annual meeting of the New York State Vegetable Growers' Association will be held in connection with Farmers' Week, at Ithaca, February 11 to 13. The value of the vegetable products of this state is enormous, and it is well that there is an association to assist growers in solving many of the problems that confront them. The object of the association is educational primarily, but its consideration of legislative questions, a better system of crop reporting, better seed, better culture and better methods of marketing, all go to make it an association that should be supported by every commercial vegetable grower in the state.—New Yorker, Dec. 30.

INSTITUTES NEXT WEEK

January 6-7, Biglerville, Adams Co., R. P. Kester, Dr. J. H. Funk and W. Theo. Wittman. Dilltown, Indiana Co., J. T. Campbell, L. O. Van Noy and E. B. Dorsett. Cambridge Springs, Crawford Co., F. Menges, F. H. Fassett, Dr. M. E. Conard and E. S. Fowler. Beech Creek, Clinton Co., L. W. Lighty, F. W. Card and W. M. Patton. Tompkinsville, Lackawanna Co., D. H. Watts, S. W. Funk and H. M. Gooderham.

January 8-9, Dry Run, Franklin Co., R. P. Kester, Dr. J. H. Funk and W. Theo. Wittman. Boswell, Somerset Co., J. T. Campbell, L. O. Van Noy, E. B. Dorsett and M. N. Clark. Saegerstown, Crawford Co., F. Menges, F. H. Fassett, Dr. M. E. Conard and E. S. Fowler. Pine Run, Lycoming Co., L. W. Lighty, F. W. Card and W. M. Patton. Clarks Summit, Lackawanna Co., D. H. Watts, S. W. Funk and H. M. Goodenham.

January 10-11, Fayetteville, Franklin Co., R. P. Kester, Dr. J. H. Funk and W. Theo. Wittman. Somerset, Somerset Co., J. T. Campbell, L. O. Van Noy, E. B. Dorsett and M. N. Clark. Guys Mills, Crawford Co., F. Menges, F. H. Fassett, Dr. M. E. Conard and E. S. Fowler. Limestone, Lycoming Co., L. W. Lighty, F. W. Card and W. M. Patton. Madisonville, Lackawanna Co., D. H. Watts, S. W. Funk and H. W. Gooderham.

JOINT AGRICULTURAL MEETING

Master Creasy, of the Pennsylvania State Grange, has called a meeting of representatives of various organizations and interests which have to do with educational and rural life, to be held at Harrisburg, January 20. The discussion will cover co-operation, transportation, co-operative credits, vocational education, industrial training and similar subjects which tend to advance Pennsylvania's agriculture. The purpose of the meeting is to effect a union of endeavor and a concentration of the efforts of the various bodies and agencies now working for agricultural development. The meeting should be liberally attended.

COUNTY NOTES

Crawford Co., Pa. (N. W.), Dec. 20.—Weather warm until 19th, then rain and snow. Stock looking well. Cows in good demand. Pittsburgh firm buying most of the milk, paying $1.75 per cwt. for 4 percent milk. Pork, 9c, dressed; beef, 8@9c, by quarter; butter, 30c; eggs, 35c; chickens, 10@11c, live.—J. F. Seavy.

Center Co., Pa. (C.), Dec. 19.—Some freezing; no snow. Horses, $100@250. Young stock selling high. Hogs, 7c; turkeys, 20c; chickens, 12c; butter, 35c; eggs, 34c; apples, 80c; potatoes, 80c; hay, $14@16 ton. Stock, feeders, 5c lb, but few feeding. Corn, 60c, shelled; wheat, 95c; oats, 40c. General conditions fairly good. Some fall plowing done. Wheat fine condition to go into quarters. Had late rain.—W. H. Fry.

Wicomico Co., Md. (S. E.), Dec. 20.—Weather mild; no snow this month. Stock in good condition. Farmers nearly thru hog killing; considerable loss in fall on account of cholera. Prices, beef on hoof, 3½c to 5c; hogs, dressed, 8c to 10c; mutton, 12c; veal, 8c; sweet potatoes, 80c hamper at depot; corn, 55@60c bu. Some farmers getting ground ready for cantaloupes and cucumbers. Fall seeding looking fair. Wheat and rye good. Scarlet clover was sowed late. Fair stand but not much growth.—W. R. Strong.

Montgomery Co., N. Y. (E. C.), Dec. 20.—Weather mild; no snow. Horses selling high. Good work teams, $500 and up. Eggs dropped to 30c. Potatoes rotting and prices advance. There will be farmers' institutes thruout the county during the winter. Much plowing has been done since last report. Many auction sales, well attended; fair prices. Pomona Grange met at Fonda, December 19.—John L. England.

Fayette Co., Pa. (S. W.), Dec. 20.—Weather fine for pushing winter farm work. Live stock doing fine. The pastures still afford grazing for stock, which is saving the abundance of roughage. Corn all husked and fodder housed or stacked. At a recent public sale fodder sold for 5c per sheaf; $1.15 bbl. for corn; hay, $18@20 ton. Quite a number of fine hogs were butchered the past three weeks. Dressed hogs, 11½@12c; pork sausage, 18@20c lb.; country lard, 18c to private customers.—S. A. Harris.

McKean Co., Pa. (N. C.), Dec. 20.—Snowing and freezing; winds westward. Beef, 8c; pork, 11c, wholesale; meal and bran, $24 ton; oats, 50c bu, retail; potatoes, 80@85c, retail; eggs, strictly fresh, 50c doz; butter, print and creamery, 44c. Farmers have most of their plowing done. But little manure about the barns, as it is hauled as fast as made.—M. Ingalsby.

Juniata Co., Pa. (C.), Dec. 19.—Weather fine; cool and dry. No snow yet. Stock in good condition. Fall-sown grain in good condition for winter. Dressed pork, 9c to 10c; fresh cows, $45 to $60; chickens, 10c; turkeys, 16c to 18c, live; butter, 38c at creamery; wheat, 95c; corn, 65c; oats, 35c; bran, $25 ton; hay, $10 to $12 ton. Fall work all done. Much fall plowing for corn. Health good.—D. B. Esh.

Green Co., Pa. (S. W.), Nov. 14.—Dry and cold. Live stock scarce. Chickens, 11c lb; butter, 38c; eggs, 35c doz. Wheat looking very good. Farm work consists mostly in getting ready for winter. No plowing done.—C. E. Addleman.

Frederick Co., Md. (N. C.), Dec. 18.—Small showers on 17th; generally fair. Stock in good condition. Plenty of feed. A large corn crop of good quality; price, about $2.25 bbl. Growing wheat in fair condition, with much fall fly. Cows are doing well. Milk, 21c in Washington market. Dairy feeds lower in price. Corn crop about housed and fodder hauled in. Most fall plowing completed. Having plenty of heavy frosts; 18 degrees our coldest weather.—H. C. Fawley.

Huntingdon Co., Pa. (C.), Dec. 12.—Cold and stormy. All farm products housed for the winter. Live stock in good condition. Prices good. Premium on butcher stock. Threshing all done; good yield of grain. Wheat selling at 95c; oats, 50c; corn, 75c; beef cattle (dressed), 10c to 12c; chickens, 10c; lard, 13c; butter, 30c; eggs, 30c. Farmers gathering in loose ends of farm work. Not much fall plowing done.—Clair L. Harnish.

Nicholas Co., W. Va. (C.), Dec. 15.—A very favorable fall and winter for fall work; however, farmers are backward with their work: The corn crop is fairly good and much more hay and other roughage in county than last winter. Cattle and sheep are doing well. Hog cholera in some sections. Dressed pork, 8c to 9c lb.; corn, 80c bu., in field. Not much wheat sown this fall, but looking good.—A. J. Legg.

Clinton Co., N. Y. (N. E.), Dec. 15.—Open weather; ground not frozen; no snow. New milch cows scarce and high. Veals, 8c, live; pork, 11c, dressed; milk, $1.90 per cwt., from December 1st. Milk scarce; some being brought over from Canada. A good deal of fall plowing done and everything in good shape for winter.—Henry E. Gilbert.

Montour Co., Pa. (C.), Dec. 16.—Weather variable, from mild to cold. Hogs, 10c; beef, 6c; eggs, 28c; butter, 38c; hay, $15 to $16; potatoes, 55@60c; cabbage, $10 ton; apples, York State, 75c to $1 bu.; corn, 65@70c; yield below average. Husking about all done, also considerable fall plowing. Ground now frozen, and lime and manure hauling now in order.—Benj. L. Diehl.

Pike Co., Pa. (N. E.), Dec. 16.—Weather very mild. Stock is mostly in good condition. Fresh cows, $40 to $50. Winter grain is in fine condition. Sheep, $4 per head. Horses and mules are high; good heavy horses, $200 per head. Farm work and general conditions very well advanced. Lime has been hauled and spread for spring use. No snow yet.—Rupert P. Nilis.

THE YOUNG FARMER

The Young Farmer, Some Things He Should Know, is the title of a new book by Dr. Thomas F. Hunt, former Dean and Director of Pennsylvania State College. The book is 5 by 7 inches; contains 288 pages; illustrated; bound in cloth. Published by The Orange Judd Co., New York. Price, $1.50.

This book was written primarily for young farmers, but is a most delightful and instructive book for old and young. It deals with specific examples and methods of men who have made a success in farming. It interests and instructs the reader in the scientific side of farming, and shows how it is made profitable. It is filled from cover to cover with things which the young farmer ought to know, and things which will make the reader a better farmer and more useful farm citizen. Among the leading subjects discussed are chapters on Essentials of Success, Means of Acquiring Land, Farm Organization, Opportunities in Agriculture, Where to Locate, Size of Farm, Rotation of Crops, Grain and Hay Farming, Cost of Farming Operations, Intensive Farming, Returns From Farm Animals, Farm Labor, Shipping, Marketing, Rural Legislation and Rural Forces. The book would prove a reliable and practical guide to any young farmer in any kind of farming.

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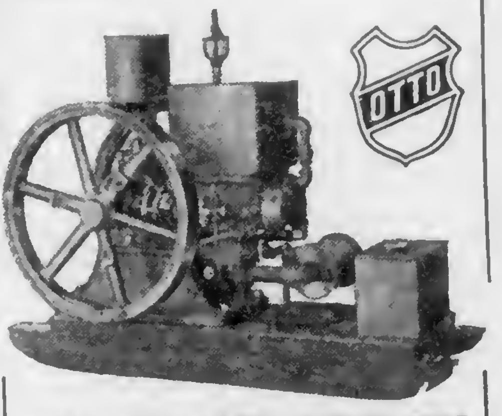

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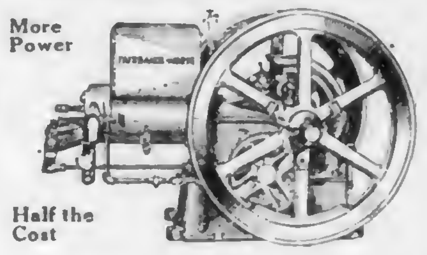

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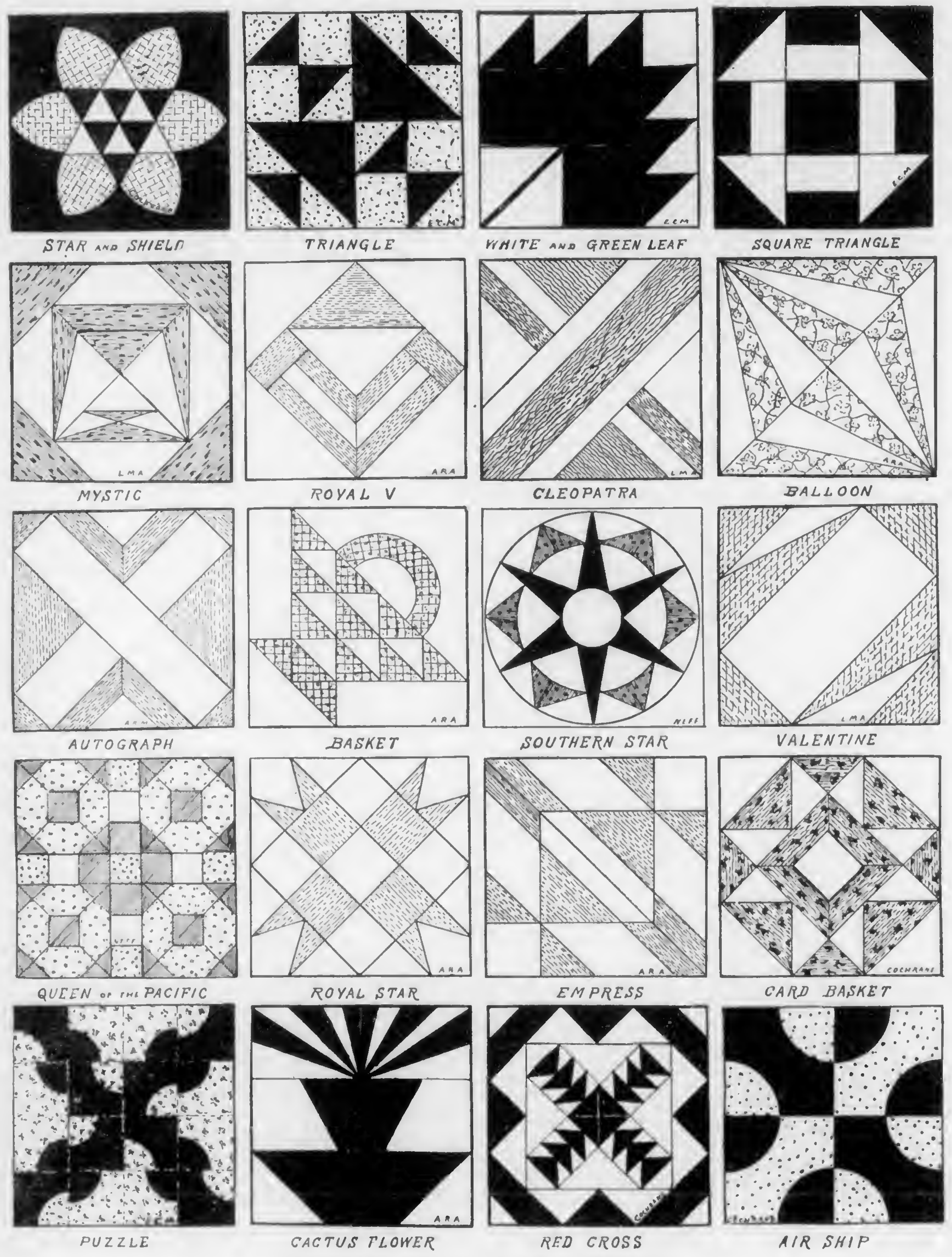
Household

A LESSON IN SOUP MAKING

By Mary Millar Buchanan

Most American housewives are familiar with the praises that appear in every cook book and elsewhere of the perennial stock-pot. Now, one is apt to become rather suspicious of the advantages pertaining to that stock-pot. Is it ever empty, or is it constantly being replenished with a supply of bones, of surplus vegetables and of odds and ends generally?



SOME NEW AND OLD QUILT PATTERNS.

In theory it sounds splendid, the idea of having a pot full of stock, always ready, the contents of which can be turned into good soup with very little trouble. But in practice it is not certain that it is quite so satisfactory. Certainly soup can be made from bones and odds and ends that are generally to be found in any larder, but it will be all the better for an admixture of stock that shall have been specially prepared from meats that have been chosen for the purpose of making into soup.

Nothing, perhaps, will more quickly invigorate either a man, woman or child when fatigued, than a really good hot soup. Any soup to be good, and of such a nature as can be relished by the most fastidious palate, must have careful preparation given to it. It is, perhaps, hardly necessary to add that it is impossible to prepare soup for eating on the same day as it is wanted; such a preparation would be fatal to its satisfactory apearance at the table.

But supposing that the soup for tomorrow's dinner is to be ox-tail, the plan of operations would be pretty near the following, to be varied, cf course, as individual tastes would require: Purchase one or two ox-tails, according to the size required, each tail making about three pints of good stock. But usual vegetables must be added to the water, not forgetting on any account the stick of celery. After the meat has simmered sufficiently long to cause it to be quite tender, but not in rags or off the bones, the contents of the pot must be poured into some large earthenware vessel to stand until the morrow.

When the soup is wanted for use, every particle of fat will be found on the top and can be easily removed. The soup is then heated and flavored according to taste. It may be served with or without the pieces of tail, thick or clear, as the fancy may dictate. The mode is the same in the making of all soups, whether it be hare, ox-tail, white, Palestine soup, or ordinary soup, just made from the shin of beef; the one great secret being the skimming and taking away of every suspicion of fat.

Turnip Soup.—Slice two dozen turnips. Put four tablespoonfuls of butter into a clean saucepan, and as soon as it melts add the sliced turnips, together with one lump of sugar and a dust of grated nutmeg. Simmer slowly until the turnips are quite cooked, but do not allow them to acquire any color. Next add two quarts of clear white stock. Allow all to come to the boil, draw the saucepan to the side of the fire, and simmer gently for one hour. Then press thru a sieve into a clean saucepan, return to the fire, and bring briskly to the boil again. When very hot, stir in rapidly one pint of boiling cream, season to taste with salt and white pepper, and serve immediately. This is a delicious soup, if properly made.

Cream of Rice Soup.—Add to three pints of good stock one pound of parboiled rice, then allow it to simmer gently over a slow fire for one hour, by which time the rice should be thoroly cooked. Rub it thru a sieve, and then return to a clean saucepan. Just before serving add to it one gill of cream and the well beaten yolks of two eggs. The cream may be omitted, if desired, and milk used in its stead. In this case, one tablespoonful of butter must be added. Make very hot, without actually boiling, and serve as quickly as possible. This will be found a very inexpensive and palatable soup.

Pea Soup.—Soak one pint of split peas over night. Then wash them in two or three waters, and put them into a saucepan with one sliced carrot, three sliced onions, one stalk of celery and one ounce of lean bacon. This latter must have had the rind, etc., carefully trimmed off. Then add three pints of stock, boil for 10 minutes, then skim carefully. Draw the saucepan to one side of the stove, and let the soup simmer gently for two and a half hours. By this time the peas should be thoroly cooked. Rub the puree thru a sieve; return it to the saucepan, and let it boil again. Skim carefully, season with a little pepper and powdered mint, and serve with fried croutons. Pea soup made in this way will be found far superior to the usual unsavory mess made with the water from boiled pork.

Palestine Soup.—Two and a half pounds of Jerusalem artichokes, two quarts of milk or stock, one heaping tablespoonful of butter, the yolks of two eggs, and one cupful of cream. Pare the artichokes and boil them in boiling salted water till quite soft, rub them thru a sieve, pour out the pulp into a saucepan with the milk and butter, pepper and salt to taste, stir over the fire till it boils, let it simmer very gently for one and a half hours. Beat the yolks of eggs, mix with the cream, put them into the turneen, pour in the hot soup, stir well, and serve immediately.

Carrot Soup.—Twelve carrots, two ounces of lean ham, two onions, one shallot, two bay leaves, one sprig of thyme, four tablespoonfuls of butter, two quarts of stock, one blade of mace, salt, paprika and pepper. Chop the vegetables and ham, fry lightly for five minutes in the butter with the herbs, then pour in the stock and let the whole simmer steadily for one hour, or until the carrots are tender; rub all thru a sieve, add seasonings, heat thoroly and serve with fried dice of bread or boiled rice.

Tomato Soup.—Half a can of tomatoes, one large carrot, one tablespoonful of flour, one quart of stock, one cupful of milk, one teaspoonful salt, six whole peppers, one onion, one turnip, two tablespoonfuls of butter, a few drops of red coloring, if required. Cut up the vegetables into small pieces, put them in a saucepan and fry for 10 minutes with the butter, then add the flour, stock, tomatoes, whole peppers and salt. Simmer for 50 minutes, then rub thru a sieve with a wooden spoon, add the milk, boil for four minutes and serve. The red coloring may be dropped in last, just enough to give the tomato shade.

Celery Soup.—One quart of white stock, one heaping tablespoonful of butter, one tablespoonful of flour, two heads of celery, quarter pint of cream, one teaspoonful of salt, four whole peppers. Wash and cut up the celery, put on in the stock with the whole peppers, and boil until tender; rub thru a sieve. Put the butter into a pan, let it get quite hot, but not brown; stir in the flour, mix till smooth, add the stock gradually, boil for three or four minutes, add the salt, then add the cream and serve at once.

Good White Stock.—Four pounds shin of veal, one onion, one blade of mace, two quarts of water, one chicken or a rabbit, a few stalks of celery, any bones from poultry. Cut up the meat into small pieces and break up the bones; put into a large saucepan or stock-pot with the water, which should be cold, and bring very gently to the boil, skim thoroly; add the above ingredients, and simmer slowly for five hours; pour thru a fine sieve, and when cold remove the fat. The bones may be boiled down again for cheaper soup.

Spinach Soup.—One and a half pounds of spinach, one teaspoonful of salt, half a teaspoonful of white pepper, half a teaspoonful of sugar, one heaping tablespoonful of butter, one tablespoonful of flour, one quart of good white stock, a grate of nutmeg and a quarter of a pint of cream. Wash and pick the spinach, throw it into a pan of boiling water containing a little sugar, salt and pepper; boil very quickly for 15 minutes, or till tender; drain, and rub thru a sieve. Melt the butter, stir in the flour until smooth, add the stock, boil 10 minutes, pour over spinach, add salt, pepper, nutmeg and cream; reheat and serve.

Asparagus Soup.—Take the heads off 40 asparagus, and put on one side. Cut up the stalks in slices, also slice one onion; put those into a saucepan with one tablespoonful of butter and a bunch of herbs, fry gently for 10 minutes, add one tablespoonful of flour, then add one quart of white stock, and simmer slowly for one hour. Rub thru a sieve, and add half a cupful of cream, yolks of two eggs, and one teaspoonful of salt, reheat, but take care not to boil it. Just before serving put in the asparagus tops, which first should be cooked in a little boiling stock containing a little salt.

EGG YOLK COOKERY

By Hilda Richmond

What to do with the yolks of the eggs when a white cake, or a sherbet, or an ice is made is a problem that concerns all housekeepers. The average economical woman fairly groans when she picks up her favorite recipe and reads "whites of 10 eggs," for she knows it will worry her to waste the rest, and she hardly knows what to do with them. The white of an egg may not be worth much in food value, as scientists tell us, but it certainly plays a large part in cookery, particularly cookery for church suppers, social occasions and company feasts.

First of all, cover the eggs—the left overs—with milk to keep them from turning hard. Milk is better than water for this purpose, altho many cooks advise water. If the milk turns sour, there are many nice things that can be made from the mixture, and if it remains sweet there are other equally nice dishes to be gotten up with little trouble.

In the sour milk list are the good suet and graham and corn meal dishes, so hearty and so enjoyable in winter. The yolks are better for corn bread than the whole eggs, for they give it a richness not found in whole-egg cake. Instead of two eggs, use four yolks, and beat well with the sour milk. This is a safe rule in all egg cookery, for the white counts about half of the egg. With a half a cup of yellow egg, a little graham flour and some raisins one of the best of puddings can be evolved. Here is the recipe: One-half cup egg, one half cup sour cream, one cup white flour, one cup raisins, spices to taste and enough graham flour to make a stiff batter. Steam three hours and serve with hot sauce. Yolks for corn cakes are better than whole eggs, and the same may be said of all sour milk gems and pancakes. For fruit cakes, particularly the common ones, no white of egg is needed. Use a little more sour milk and your cake will be all right.

In the sweet milk list there are waffles, pancakes, marble cakes, mayonnaise, plain salad dressing, gold cakes, puddings, salads, gems and many other good things in plain and fancy cookery. Just a hint or two can be given. Take one-half cup of egg yolks, one large tablespoon of butter, pinch of salt, teaspoon of prepared mustard, and one-half cup of vinegar. Mix well and cook in double boiler until smooth and creamy, adding more vinegar if too thick. For cold slaw, potato salad, lettuce and many other dishes this dressing can not be excelled, and it can be made in a few minutes.

Another way to use a large quantity of yolks is to put them in a buttered tin cup and pour a little cold sweet milk over the top. Set in a kettle of hot water and cook until done. They may be crumbed for any kind of salad requiring cold boiled eggs, or may be used in soup, as the Germans do when they drop a well beaten egg in the hot soup and at once serve it.

These are only a few of the many ways in which the yolks can be used profitably, so no one need hesitate about taking a recipe requiring whites only on the ground of extravagance.

MAKING DELICATE CHILDREN STRONG

Happily for delicate children, the old notion of giving them drugs to build up strong constitutions has been relegated to the rubbish heap, along with the fearful home-made "bitters" with which children were dosed a generation or two ago. Unfortunately, there are still some parents who believe in giving drugs too frequently, but the new and healthier and more pleasant doctrine of feeding for strength is gaining ground. A sickly horse or cow or sheep is not dosed with drugs, but is given the food suited to its needs, and Nature is allowed to work a cure, and by degrees that same doctrine is being used where children are concerned.

Butter, cream, milk and eggs are ideal foods to build up rugged constitutions, yet often children on farms loathe all these articles. It takes patience and tact and persuasion to conquer these real or fancied dislikes on the part of children, for they should never be forced to eat food they do not like; but once they are persuaded to eat good foods they begin to grow strong at once. One mother allowed her little girl to drink milk thru a straw, in order to induce her to take the necessary amount of nourishment, and eggs were spoken of in that home as luxuries until the child wanted to eat them. Many of the neighbors thought the mother was unduly humoring the child, but when health and strength were established, the humoring was at an end.

Most children love cocoa, and it is an ideal drink for them. Tea and coffee are harmful in the extreme, but cocoa is a food and drink at the same time, like milk. Broths of all kinds, chicken, beef, rice, fruit, cereals and many other common articles of diet are excellent for delicate children. The idea is to give the greatest possible nourishment and the least possible waste. Pork is not good for sickly children, and is apt to cause bad skin eruptions. A little well-cooked beef, mutton or chicken will do no harm but positive good, and any kind of easily assimilated meat can be given. However, the simple foods, like bread and milk, soups, cereals with cream, poultry, rice and eggs are best in the long run, and certainly they are to be found on every farm.

Among special foods are to be mentioned oranges, dates, figs, grape juice, all milk and egg custards and puddings, corn bread, mush, onions (not fried) lettuce, celery and other vegetables well cooked and served with cream sauce. These are not to be had at all seasons on the farm, but can be bought occasionally for variety. Even when a child will eat eggs and toast well buttered, and other healthful foods, there is danger lest the delicate appetite flag, so variety is very necessary. Then, too, a little treat from the store is worth very much to children, and they think more of it than the things grown on the farm.

Pastry, highly seasoned foods, many nuts, pork, hot breads and all vegetables hard to digest should be kept from delicate children. If cheese does not constipate, it is a valuable food, provided the mild cream cheese is selected. Apples are always good, for they are rich in health-giving materials, and so are most of the fruits. A little care and a little study of the individual child will bring about good results in a very short time and will be permanent. Don't resort to drugs, but try Nature's remedies with your delicate children. No doubt it is easier to give a dose out of a bottle than to prepare extra foods three times a day, but a child's stomach is a delicate thing and drugs may injure it for life. So be very cautious about what you pour into the organ that must last a whole lifetime.—Hilda Richmond.

Save Remnants.—In packing odds and ends of material left from cutting garments, it is better to spread out smoothly and roll into a long bundle, leaving the ends in sight. Whenever a piece is needed, a slight inspection will determine if the goods are in the package without tiresome search.—R. R.

Slippers Rest feet.—When one is tired, what a relief can be gained by simply resting the feet. Slip off the heavier shoes and have a pair of cloth house slippers handy with which to replace them. Pieces of cloth should always be saved for this purpose, and it requires but a little time to construct a most comfortable, if not elegant, pair of slippers for indoor wear.—R. R.

PENNSYLVANIA FARMER PATTERNS

Be sure to give the figures and letters of each pattern exactly as printed at the beginning of each description. We will not be responsible for correct filling of your orders unless you do so. Also give bust measure when ordering waist patterns, waist measure for skirt and age for children's patterns. Address Pennsylvania Farmer, 214-18 So. 12th St., Philadelphia, Pa.

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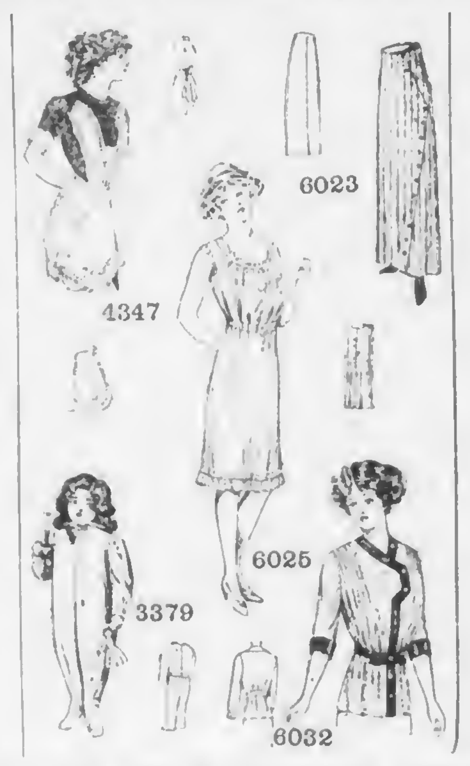

3379—Children's Night Drawers.—Cut in 5 sizes, 1 to 9 years. For 5 years it requires 2⅛ yards, 36 inches wide; ⅝ yard of edging. Price, 10 cents.

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Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., Dec. 30, 1912.

The butter market ruled firm, especially on the solid packed stock. Other grades were in fair demand. Strictly fresh eggs were in good demand, but poorer grades were dull and weak. The poultry market ruled steady, altho trading was light. Dressed poultry remained unchanged.

Butter.—Western creamery, 38c; extras, 37c; firsts to seconds, 28@35c; special prints, 42@45c; near-by prints, 39c.

Cheese.—New York full cream, 18@18½c; skims, 11@15c, according to quality.

Eggs.—Candled, 35@38c doz.; extras, 32c. Current receipts at $8.40@8.70 per standard case.

Poultry.—Fowls, 13@15c; old roosters, 11@11½c; spring chickens, 13@15c; ducks, 14@15c; pigeons, 15@18c pair; turkeys, 18@19c.

Dressed Poultry.—Western fowls, 18@19c; roosters, 12c; chickens, 18@20c; turkeys, 20@23c.

Vegetables.—White potatoes, choice, 70@75c bu. Onions, 30@40c bu. Cabbage, $5@6.00 ton. Lettuce, 50c@$1.00 basket. Cucumbers, $2.75@3.50 basket. Beets, 1½@2½c bch. String beans, $1.50@2.50 hp. Celery, 25@50c bch. Spinach, $1.00@1.25 bbl. Kale, 75c@$1.00 bbl. Egg plant, $2.00@2.50 box.

Fruit.—Apples, choice varieties, 25@75c hamper, $2.00@3.50 bbl. Grapes, 9@13c basket. Cranberries, $5.00@9.00 bbl.; $1.75@2.75 crate.

Hay and Grain.—No. 1 timothy, new, $19.00@19.50; No. 2, $16.50@17.50; No. 3 do., $14.50@15.50. No grade, $10.00@12.00. Clover, mixed, No. 1, $16.00@16.50; No. 2 do., $14.00@15.00. No. 1 tangled rye straw, $12.50@13.00; No. 1 oats straw, $10.50@11.00. New shelled corn, as to quality, 56@58c; new cob, 52@54c per 70 lbs. No. 2 red wheat, 97½@98c; No. 3 do., 92½@93c. No. 2 white oats, 40½@41c. Standard white, 39½@40c; No. 3 white, 38½@39c.

Hides and Skins.—Steers, abattoir, 17½@18c; do. country, 14@14½c. Cows, abattoir, 15c; do. country, 13c. Bulls, abattoir, 13c; do. country, 11c. Calf skins, Nos. 5 to 12 and up, $1.45@2.65; do. country, $1.50@2.00; do. green, 13@14c lb.

Seeds.—Timothy, $3.15@3.25 bu.; clover, white, $25; do. crimson, $6.25; do. mammoth, $14.50; do. sweet, $13.00; do, alsike, $13.25; red top, per bu., $13.50; alfalfa, $7.00@10.00; Canada field peas, $2.35; vetch, $8.50; rye, winter, $1.35; spring, $2.25; soy beans, $3.25; barley, $2.50; buckwheat, $1.50; cowpeas, $3.00@3.25; millet, $1.90@2.75; oats, $1.20; wheat, $1.70@2.00.

Coffee.—Rio, 7s, 13¾c; Santos, 4s, 15¾c. Mild Coffee—Cordova, 16¾@18c.

Provisions.—City beef, smoked and air-dried, 21@22c. Beef hams, 29@31c. Pork, family, $21.00@22.00. Hams, cured, 13¾@14¼c; skinned, 12@12¾c; smoked, 14@16c. Other hams, smoked, city cured as to brand, 15@16c. Picnic hams, 11¼@11½c; do, smoked, 13@13½c. Bellies in pickle, 13½@14c. Breakfast bacon, as to quality, 17@20c. Lard, refined, 11⅜@11½c; do. in tubs, 11¼@11⅝c; do. kettle rendered, 11@11½c. Tallow, prime city, 6¾c; do. country, 6½c; do. dark, 5¾c; do. cakes, 7c.

Sugar.—Cut loaf, $5.70 cwt,; cubes, $5.15; powdered, $5.00; granulated $4.90; standard granulated, $4.95; crystal A, $4.90.

Flour.—For 196 lbs., in wood, winter clear, new, $4.10@4.25; do. straight, new, $4.40@4.65; favorite brands, $4.75@5.25. Rye flour, Penna., $3.60@3.75.

BALTIMORE PRODUCE

Baltimore, Md., Dec. 30, 1912.

Butter prices are unchanged. Receipts are limited, but fully equal the demand. Trading in eggs is fair at unchanged prices. Live poultry is in light supply and firm. Dressed poultry is in good demand at active prices. There is little change in vegetables.

Butter.—Creamery, fancy, 36c; do., choice, 34@35c; prints and blocks, 34@37c. Maryland and Penna. rolls, 22@24c; prints, 21@21½c. Process, 26@28½c.

Cheese.—Flat, 17½c; Daisy, 18@18½c.

Eggs.—Md. and Penna., firsts, 27c; western, 27c; southern, 24@25c.

Live Poultry.—Hens, 15@16c; chickens, 14@15c; old roosters, 10c. Turkeys, 22c. Ducks, 14@15c. Geese, 14@16c. Guinea fowls, 30@40c each.

Dressed Poultry.—Turkeys, 21@24c; chickens, 16@17c; roosters, 10@11c; ducks, 15@16c; geese, 14@17c.

Vegetables.—Potatoes, white, 65@70c bu. Sweets, $1.75@2.50 bbl. Cabbage, $5.00@6.00 per ton; Danish, $7.00@8.00. Onions, 35@40c bu. Lettuce, 20@35c per box. Egg plant, $2.00@3.00 crate. Peppers, $3.50@4.00 crate. Squash, 10@15c basket. Spinach, 30@40c box. Cucumbers, $3.25@4.00 basket. Beans, green, $1.50@2.25 basket. Celery, $2.00@2.50 crate. Turnips, 20@25c box. Cauliflower, $2.50@2.75 bbl. Horseradish, $1.00@1.25 box.

Fruit.—Apples, new, $2.00@3.50 bbl., 50c@$1.00 bu. Cranberries, $8.00@9.00 bbl.

Grain.—Wheat.—No. 2 red western, $1.07½; contract, $1.05½. Corn, new, 52c; contract, 52c. Oats, No. 2 white, 39½@39¾c; standard white, 38½@38¾c; No. 3 white, 37½@37¾c. Rye, 56@65c.

Hay and Straw.—No. 1 timothy, $19.00@19.50. No. 2 timothy, $17.00@17.50. No. 3 do., $14.00@16.00. Choice mixed, $15.50@16.00. No. 1 clover, $14.00. No. 2 do., $10.00@12.00. No. 1 tangled rye straw, $13.00@14.00. No. 1 oat straw, $9.00@10.00. No. 1 wheat straw, $8.00.

Millfeed.—Spring bran, $23.50@24.00. Middlings, flour to white, $26.00@29.00; western middlings, $23.50@24.00; city mills mids., $23.50@24.00.

NEW YORK PRODUCE

New York City, Dec. 30, 1912.

The butter market is quiet, buyers awaiting the new year before doing much buying. Quality is improving. Cheese is quiet but prices steady. Eggs are steady, with the future trend uncertain. There is fair trading in best grades. Dressed poultry is irregular. Supplies are ample, but quality is poor. Live poultry receipts are heavy, but demand is active and the market firmer. Potato offerings are liberal and market dull and weak. Onions are in excessive supply and dull. Cabbages dull and low. Other commodities as quoted.

Butter.—Creamery firsts to extras, 32@37½c; thirds to seconds, 27@31c; factory, 21@24½c; state dairy, 23@34c; packing stock, 18@21c; process, 22½@27c.

Cheese.—Whole milk special, 18c; do., common to fancy, 16@17¾c; skims, 8@12½c.

Eggs.—State and near-by, 35@45c; fresh gathered, 27@32c; mixed, 27@30c; refrigerator, 14@21c.

Dressed Poultry.—Turkeys, dry, 21@26c; chickens, Penna., 14½@20c; fowls, 12@14½c; old roosters, 11½c; ducks, 17@20c; roasters, 17@18c.

Live Poultry.—Fowls, 12½@14c; chickens, 12½@13c; roosters, 10c; ducks, 14@15c; geese, 14c.

Grain.—Steady. Wheat, No. 2 red, $1.07; No. 1 Northern, 98c. Corn, 54½c. Oats, standard white, 39@39½c.

Vegetables.—Potatoes, state, $1.75@2.00 per 165-lb. bag. Cabbage, $3@4 ton; do. Danish, $5@8 ton. Green beans, $1.00@2.50 basket. Carrots, 50c@$1.00 bag. Cucumbers, $2.50@3.00 basket. Lettuce, $1.00@2.25 basket. Squash, $1.00@1.25 bbl. Celery, 75c@$3.25 case. Horseradish, $3.00@5.00 cwt. Parsnips, 75c@$1.12 bbl. Turnips, 35@75c bbl.

Fruit.—Apples, $1.75@4.00 bbl., according to variety. Pears, $2.00@4.00 bbl. Cranberries, $7.00@9.50 bbl.

Nuts.—Hickory, $1.00@2.00.bu Black walnuts, 50@60c bu. Butternuts, 75c@$1.00.

YORK PRODUCE MARKET

York, Pa., Dec. 30, 1912.

The markets during the past week were gay with the usual signs of the Christmas tide. Plenty of greens, trees, etc. There were good supplies of all kinds of poultry, which sold at fair prices. There is a strong demand for extra good apples. Our markets here are below the standard. Our people have not yet learned that it pays to grade and show apples in an attractive manner. Butter is in demand. Eggs are tending upward, owing to the cold weather. The after-holiday markets were unusually active this year.

Butter.—Country, 32@34c; separator, 35@38c. Milk, 6c per qt.

Eggs.—30@35c per doz.

Poultry.—Hens, 12@14c; springers, 14c lb. Dressed poultry, 50c@$1 each.

Vegetables.—Potatoes, 8@10c half peck; 60c bu.; cabbage, 3@6c each; lettuce, 5@8c; beets, 3@5c bunch, 10c per ½ pk.; radishes, 2@5c; turnips, 8@10c per ½ pk.; onions, 10c per ½ pk; peppers, 10c doz.; Lima beans, 15c qt.; soup beans, 10c qt.; celery, 2@10c stalk; sweet potatoes, 10c per ½ peck; spinach, 10c per ½ pk.; parsnips, 10c per ½ pk.; sauer kraut, 7@8c qt.; lard, 14@16c lb.; corn meal, 5@6c qt.

Fruit.—Apples, 10@30c a half peck; grapes, 10@15c basket; pears, 12@15c per ½ pk.; chestnuts, 12@20c qt.; walnuts, 12c per ½ pk.

Retail Grain Market.—Wheat, $1.07; corn, 68c; oats, 50c; bran, $1.30 a cwt.; rye, 78c; middlings, $1.55 a cwt.

WASHINGTON PRODUCE

Washington, D. C., Dec. 30, 1912.

Eggs.—Near-by, fresh, per dozen, 30c; southern, per dozen, 26@27c.

Cheese.—New York, new, per pound, 19c; flat, 19c.

Butter, best prints, per pound, 38c; tub, 37c; process, 29@30c; undergrades, 25c.

Live Poultry.—Hens, per lb., 15c; roosters, 9c; springers, 16@18c; turkeys, 19@20c; geese, live, 12@13c; ducks, 13@15c.

Vegetables.—Potatoes, bbl., $1.25@1.75; 60@90c bu. Onions, $1.00@1.15 per 100-lb. bag. Lettuce, per bas., $1.00@3.00. Beans, $1.50@2.50 basket. Peppers, per crate, $1.25@1.50. Egg plants, per box, $2.00@2.50. Squash, per bbl., $1.25@1.75. Beets, $2.00@3.50 per 100 bchs. Mushrooms, per lb., 50@75c. Carrots, 1½@2½c bch. Cabbage $2.50@3.00 bbl. Raddishes, 50c@$1.00 per 100. Cauliflower, $3.50@6.00 bbl. Apples, $1.50@4.00 bbl.

WILMINGTON PRODUCE

Wilmington, Del., Dec., 30, 1912.

The midweek market was advanced one day this week. All departments were active. There was a good supply of turkeys, selling from 25@30 cents per pound. There was little change in prices of other commodities.

Fruits.—Apples, 28@60c pk.; $2.25@4.00 bbl. Grapes, $5.00@7.50 keg.

Vegetables.—Potatoes, 80c bu.; 30c pk. Cabbage, 75c@$1.00 bbl.; $4.00@5.00 per 100; 4c each. Onions, 20c ½ pk. Celery, 25@40c doz.; 5@15c bch. Spinach, $1.50 bbl. Sweet potatoes, 60c basket; $2.00@3.00 bbl. Kale, $1.50 bbl. Carrots, 10c ½ pk. Lettuce, 5@8c head.

Poultry.—Chickens, live, 16@18c; do., dressed, 17@20c. Ducks, 14c lb.; dressed, 18@22c. Turkeys, dressed, 25@30c. Geese, live, 14c.

Eggs.—32@40c; storage, 27@30c.

Butter.—Creamery, 30@35c; prints, 38@45c.

BUFFALO PRODUCE

Buffalo, N. Y., Dec. 30, 1912.

Butter.—Fair demand. Creamery choice, 36@37c; choice dairy, 29@30c.

Cheese.—Active and firm. Fancy, 17@18c; good, 14@15c.

Eggs.—Fair supply. State, candled, 30@33c; storage, 20@24c.

Dressed Poultry.—Good. Turkeys, per lb., 23@25c; fowls, fancy, 13@16c; chickens, 14@17c; old roosters, 11@12c; ducks, 18@22c; geese, 16@17c.

Live Poultry.—Active. Chickens, 13@15c; ducks, 16@19c; geese, 14@16c; turkeys, 19@22c.

Vegetables.—Potatoes, active. Home-grown, 60@65c bu. Cabbage, $1.50@2.50 per 100. Onions, 50@60c bu. Beans, green, $3.00@4.50 hamp. Turnips, 75@80c bbl. Celery, 25@35c doz.

Beans.—Quiet, steady. Marrow, fancy, $3.30@3.35; medium, $2.50@2.60; red kidneys, $2.75@3.00.

Fruits.—Apples, $1.75@2.75 bbl.; 50@75c bu.

Honey.—Quiet. No. 1 fancy, 17@18c. No. 2 new, 14@15c; dark, 12c.

Hay.—Firm. Timothy, choice, on track, $19.00@19.50; No. 1 do., $18.50; No. 2, $17.50; light mixed, No. 1, $17.50; rye straw, $11.00@12.00; oat and wheat straw, $10.00@11.00.

Feed.—Firm. Spring bran, $22.50 ton. Standard mids., $22.50. Corn meal, $27.00. Gluten, $27.50. Hominy, $26.50.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., Dec. 30, 1912.

The beef market advanced on almost every grade under greater demand. Offerings were all sold up.

	Beef Cattle	Sheep and Lambs	Hogs
Total for week	4,529	12,608	4,609
Previous week	4,620	11,787	4,380

Best steers	$8.75@9.00
Choice steers	8.25@8.50
Good	7.75@8.00
Medium steers	7.00@7.25
Common steers	6.50@6.75
Bulls	4.50@6.75
Fat cows	5.50@6.50
Thin cows	2.75@3.25
Milk cows	40.00@80.00

Veal calves are steady.

Best calves	$11.00@12.00
Good to choice do.	10.00@10.50
Medium	7.50@8.00
Common do.	6.00@7.00
Thin do.	5.00@8.00

Lambs and sheep are a shade higher. Offerings were not so liberal and demand fair.

Extra wethers	$4.85@5.00
Choice wethers	4.50@4.75
Good wethers	4.00@4.25
Common to medium	2.00@3.50
Ewes, fat	4.00@4.50
Extra lambs	8.50@9.00
Good to choice do.	8.50@8.75
Common to medium	5.50@8.00

Hogs are about steady, westerns selling at $10.50@10.75.

City Dressed Stock.—Choice classes of dressed meat are a shade higher. Trade is normal. Steers, 9½@14c; heifers, 9@12½c; cows, 7@10½c. Veal calves 14@16c; country dressed calves, 13@14c; extra do., 15c. Sheep, 8@9c; extra wethers, 9½c. Spring lambs, 13@14c. Hogs, 10¾@11c.

BALTIMORE LIVE STOCK

Baltimore, Md., Dec. 30, 1912.

Cattle receipts for the week were 1,936 head, as compared with 1,477 head last week. The market is active and a little higher.

Steers	$5.25@8.75
Heifers	4.50@7.25
Cows	2.25@5.50
Bulls	3.50@5.75
Fresh cows	$25.00@80.00

Sheep and lamb receipts for the week were 3,133 head, compared with 4,601 head last week. Under light supply, lambs are higher and sheep steady.

Sheep	$2.25@5.00
Lambs	6.50@9.25

Hog receipts for the week were 12,165 head, against 13,310 head last week. The market is higher under a light supply.

Light westerns	$7.80@8.10
Heavy to medium	8.00@8.20
Near-by	7.80@7.95
Pigs	7.25@7.75
Roughs	6.00@7.50

Calf receipts this week were 197 head, against 183 head a week ago. The market is higher under light supply, at 6@11c lb.

NEW YORK LIVE STOCK

New York City, Dec. 30, 1912.

Cattle receipts were 4,204 head. The market is firm. Bulls and cows are steady.

Steers	$5.00@9.10
Bulls	4.75@6.50
Cows	3.10@6.25

Dressed beef steady at $10.00@13.20 for native sides.

Calf receipts were 2,295 head. The market is steady. Barnyard calves higher.

Choice veals	$12.00@12.50
Good veals	9.00@11.50
Culls	6.00@8.00
Barnyard calves	4.75@6.00
Fed calves	5.75@6.50
Westerns	4.50@5.50

Dressed calves are strong.

City-dressed veals	14@18½c
Country-dressed veals	9@15½c

Sheep and lamb receipts were 9,652. The market is firm.

Sheep	$3.50@4.75
Culls	3.00@3.25
Lambs	8.00@9.50
Culls	5.00@6.50
Yearlings	5.00@5.50

Hog receipts were 12,000 head. The market is 10 cents higher.

Light to heavy	$8.00@8.10
Pigs	7.90@8.00
Roughs	6.75@7.00

PITTSBURGH LIVE STOCK

Pittsburgh, Pa., Dec. 30, 1912.

Today's cattle receipts were 85 loads. The demand was quiet and the market ruled slow at barely steady prices. Bulls, cows and heifers were draggy.

Good to choice	$9.00@9.2
Good, 1300 to 1400 lb.	8.25@8.6
Medium to good, 1200-1300 lb.	7.50@8.7
Tidy, 1050-1150 lb.	7.40@8.0
Fair to medium, 900-1100 lb.	6.50@7.1
Common, 700 to 900 lbs.	4.25@5.7
Common to good fat oxen	4.00@6.0
Common to good fat bulls	3.50@6.7
Common to good fat cows	3.75@6.2
Heifers, 700 to 1000 lbs.	4.25@7.5
Bologna cows	3.35@3.6
Fresh cows and springers	25.00@90.0

Calves.—Receipts were 400 head. The market is good and strong.

Heavy and thin calves	$5.00@7.00
Veal calves	9.00@11.50

Hogs.—Today's hog receipts were 70 double-deck loads. The market was active and higher.

Prime heavy	$7.70@7.75
Prime medium weights	7.70@7.80
Heavy mixed	7.70@7.75
Best heavy Yorkers	7.75@7.80
Light Yorkers	7.75@7.80
Pigs as to quality	7.75@7.80
Common to good roughs	6.50@7.00
Stags	5.75@6.25

The supply of sheep and lambs today was 26 double-deck loads. With a good demand the market ruled active and higher on all grades of sheep and lambs.

Prime wethers	$4.85@5.00
Good mixed	4.00@4.25
Fair mixed ewes and wethers	3.25@3.75
Culls and commons	2.00@2.50
Spring lambs	6.00@9.00
Good mixed	4.00@4.20

BUFFALO LIVE STOCK

Buffalo, N. Y., Dec. 30, 1912.

Cattle receipts today were 3,500 head. Trading was active, and the market strong at firm prices.

Choice heavy steers	$8.50@9.00
Medium	7.75@8.25
Yearlings	8.00@8.65
Plain heavy	7.50@7.75
Handy butchers	7.25@7.75
Good to choice fat cows	5.00@6.50
Good to choice heifers	4.50@7.00
Butcher bulls	4.50@6.50
Feeders	5.40@6.25
Stockers	4.25@5.50
Cows and springers	40.00@80.00

Calf receipts today were 700 head. The market was firm.

Choice veals	$11.50@12.00
Light and thin	6.00@8.50

There were 10,000 head of sheep and lambs on sale today. The market was strong and higher.

Choice lambs	$9.25@9.50
Poorer grades	6.00@6.50
Yearlings	6.75@7.75
Wethers	5.25@5.50
Ewes	4.50@4.75
Sheep	4.75@5.00

Saturday's hog receipts were 17,600 head. The market was active, and prices steady to firm.

Heavies	$7.80@7.90
Mixed and medium	7.50@7.75
Yorkers	7.50@7.75
Light Yorkers	7.80@7.90
Pigs	7.80@7.90
Stags	5.25@6.25
Roughs	6.90@7.10

PITTSBURGH HAY AND GRAIN

Pittsburgh, Pa., Dec. 30, 1912.

The hay receipts, both received and in prospect, are heavy and above normal. The demand is slow on account of the close of the year. Timothy hay is weak, clover and clover mixed are in poorer demand, and threshed hay has few inquiries. Straw receipts have increased, while the demand has decreased, causing a weaker market. No. 1 timothy, $16.00@16.50; No. 2 do., $14.00@15.00; No. 3 do., $12.00@13.00; No. 1 light mixed, $15.00@15.50; No. 1 clover mixed, $15.00@15.50; No. 2 do., $13.00@14.00; No. 1 clover, $15.00@15.50; No. 2 do., $12.00@14.00. No. 3 prairie, new, $11.00@11.50; No. 4 do., $9.00@10.00. No. 1 oat straw, $10.00@10.25; No. 2 do., $9.50@10.00; No. 1 wheat, $10.00@10.25; No. 2 do., $9.75@10.00; No. 1 rye, $11.00@11.50. No. 2 do., $9.50@10.00. Ear corn arrivals are more abundant, but demand is just as strong. No. 2 yellow, 54@55c. No. 2 high mixed, 53@54c. Shelled corn is in good demand with moderate receipts. Market is fair. No. 2 yellow shelled, $55@56c; No. 3 do., 54@55c; No. 3 natural, 51½@52½c; sample, 50@51c. Oats are in heavy receipt and slow demand. Market weak. No. 2 white, 37¼@38c; standard, 37@37½c; No. 3 do., 36@36½c; No. 4 do., 35@35½c. Mill feed is steady under ample receipts. No. 2 white mids., $25.00@25.50; No. 1 brown mids, $22.50@23.00. Winter wheat bran, coarse, $22.50@23.00; do., medium, $22.00@22.50.

ELGIN BUTTER QUOTATION

Elgin, Ill., Dec. 30, 1912.

The quotation committee of the Elgin Board of Trade this afternoon declared butter firm at 34c a pound.

NEW YORK MILK QUOTATION

The wholesale milk price is $2.01 per 40-quart can for class C; class B, $2.10.

TOBACCO MARKET

Comparative inactivity characterized conditions the past week. Holidays were enjoyed by all hands who will return to create a situation even more interesting, it is predicted, than during past weeks. Growers' however, continued stripping, as a rule, the fine season being a great incentive. Up to date deliveries have been few, but the new year will see the same quite active. Growers are holding at $11 and $12 per cwt. for good crops. Hail-cut has sold as low as $3 and $4 per cwt. Very few sales were made during the week.

A slight movement was noted in the sale of 1909 tobacco, but prices were unchanged. It is said that manufacturers have discovered or applied a process whereby this comparatively undesirable tobacco is converted into a fine filler article. It is thought that the demand for this class of tobacco will be steady from now on.

An interesting communication states that the growers of Clinton and Lycoming counties have a splendid crop which they are selling at remunerative prices. Ninety percent of Havana has been sold to Pittsburgh packers, and at prices ranging from $12 to $10 and $3 per cwt in the bundle. Seed leaf sold at from $12 and $3 to $10 and $3 for crop lots. Large quantities have been sold in the Jersey Shore section, at prices ranging from $14 and $3 to $12 and $3 per cwt. for Havana, and from $11 and $3 to $8 and $3 for seed leaf. In this section but 100 acres remains unsold.

Lock Haven is advertising a tobacco fair, to be held January 25th. After this show the exhibit will be brought to Lancaster and exhibited at the show to be given by the Lancaster County Tobacco Growers' Association, not in competition, however, but for inspection and comparison.

The factories have enjoyed an almost unprecedented holiday trade, and are now busy stock taking prior to the filling of spring orders. Such heavy demands upon their stock of leaf tobacco will doubtless send them into the market for new supplies, and it is predicted that the same will create an increased demand early in the new year.—H. E. Tweed, December 30, 1912.

THE POTATO

The Potato, is the title of a new book by Eugene H. Grubb, special commissioner to Europe in potato investigation, and W. S. Guilford, director of Agriculture for Sacramento Valley Irrigation Co. The book is 6 x 9 inches. Bound in cloth. Copiously illustrated; 545 pages. Published by Doubleday, Page & Co., New York. Price, $2.00.

This is one of the most complete discussion on the potato, its production and marketing, ever published. It contains eight chapters on general cultural methods, with 13 additional chapters discussing methods used in various sections of this country and in foreign countries. Other chapters deal with cost of growing, markets and marketing, enemies, fertilizers for, varieties, uses of, history, legislation on, etc. It presents an exhaustive and authoritative discussion of the entire subject of potato growing.

INJURIOUS INSECTS

Injurious Insects, How to Recognize and Control Them, is the title of a book just out, by Walter C. O'Kane, entomologist of the New Hampshire Experiment Station. The book contains 414 pages, 5 x 7 inches; is bound in cloth and illustrated with 600 original photographs. Published by The Macmillan Company, New York. Price, $2.00.

This is a book that should be in the hands of every fruit and vegetable grower, and would be of value to every general farmer. It is a complete catalog of the injurious insects which prey upon farm, orchard and garden crops, and the illustrations and descriptions are so concise and definite that they serve as a ready means of identifying such insects. After identification, the directions for control and destruction are simple and complete. The photo-engravures in this book are wonderful in the detail they give, and form a most valuable feature. The subject matter is well arranged, covering first the general discussion of insects and how they may be recognized, and following with detailed discussion of control and treatment under the four head of pests of the garden and field crops, pests of orchard and small fruits, pests of the household and stored products, and pests of domestic animals. The book is worth many times the price to any farmer who will make use of it.

FARM BOYS AND GIRLS

Farm Boys and Girls.—A new book by Prof. William A. McKeever, Professor of Philosophy, Kansas State Agricultural College. Bound in cloth; 321 pages; 5 x 7½ inches; illustrated. Published by The Macmillan Company, New York, Price, $1.50.

This book deals with the problems in the development of the rural schools and in the improvement of social, school and church conditions in rural communities. It deals with the much-discussed question of keeping the children interested in the country, with more fact and reason in the discussion than we have ever before found in the handling of this subject. This book was written primarily for the rural parents, and it should be in the hands of such in every country community.

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BOOK II

WHAT HAPPENED AT NINE O'CLOCK

SYNOPSIS OF PRECEDING CHAPTERS

The scene of the story is laid in the home of Mrs. Varney, the wife of a Confederate general, in the city of Richmond. The city is being beseiged and is in danger of Union invasion. Edith Varney has fallen in love with Captain Thorne, who is accused by Arrelsford, a Confederate Secret Service man, of being a spy. Captain Thorne is under suspicion and is being watched. Wilfred Varney is preparing to join the army, as soon as he can secure his father's consent. His childhood sweetheart, Caroline Mitford, has prepared his uniform and is ready to render further service.

CHAPTER VII (Continued)

Responding to Mrs. Varney's call, old Martha soon appeared.

"Did you ring, ma'am?" she asked.

"Yes," was the answer. "Has Miss Caroline gone yet?"

"No, ma'am," answered Martha, smilingly displaying a glorious set of white teeth. "She's been out in de kitchen fo' a w'ile."

"In the kitchen?"

"Yas'm. Ah took her out dere. She didn't want to be seed by no one."

"And what is she doing there?"

"She's been mosly sewin' an' behabin' mighty strange about sumfin' a gret deal ob de time. She's a-snifflin' an' a-weepin', but Ah belieb she's gittin' ready to gwine home now."

"Very well," said Mrs. Varney, "will you please ask her to come in here a moment before she goes."

"Yas'm, 'deed Ah will," said old Martha, turning and going out of the door thru which, presently, Caroline herself appeared.

She looked very demure, and the air of innocence, partly natural but largely assumed, well became her, altho it did not deceive Mrs. Varney for a moment, or would not have deceived her if she had had any special interest in Caroline's actions or emotions. The greater strain under which she labored made the girl of small moment; she would simply use her, that was all.

"Caroline, dear," she began immediately, "are you in a great hurry to go home?"

"No, ma'am, not particularly, especially if I can do anything for you here," answered the girl readily, somewhat surprised.

"It happens that you can," said Mrs. Varney; "if you can stay here a few minutes while I go upstairs to Howard it will be a great help to me."

"You want me just to wait here, is that it?" asked the girl, somewhat mystified.

Why on earth anybody should be required to wait in a vacant room was something which Caroline could not understand, but Mrs. Varney's next words sought to explain it.

"I don't want you merely to wait here but—well, in fact, I don't want anybody to go out on the veranda, or into the garden, from the front of the house, under any circumstances."

Caroline's eyes opened in great amazement. She did not in the least understand what it was all about until Mrs. Varney explained further.

"You see Edith's there with——"

"Oh, yes," laughed the girl, at last, as she thought, comprehending, "you want them to be left alone. I know how that is, whenever I am—when some—that is of course I will see to it," she ended rather lamely and in great confusion.

"Just a few minutes, dear," said Mrs. Varney, smiling faintly at the girl's blushing cheeks and not thinking it worth while to correct the misapprehension, "I won't be long." She stepped across the room, but turned in the doorway for her final injunction, "Do be careful, won't you?"

"Careful!" said Caroline to herself, "I should think I would be careful. As if I didn't know enough for that. I can guess what is going on out there in the moonlight. I wouldn't have them disturbed for the world. Why, if I were out there with—with—Wil—with anybody, I wouldn't——"

She stopped in great dismay at her own admissions and stood staring toward the front windows, over which Mrs. Varney had most carefully drawn the heavy hangings.

Presently her curiosity got the better of her sense of propriety. She went to the nearest window, pulled the curtains apart a little, and peered eagerly out. She saw nothing, nothing but the trees in the moonlight, that is; Edith and Captain Thorne were not within view nor were they within earshot. She turned to the other window. Now that she had made the plunge, she determined to see what was going on if she could. She drew the couch up before the window and knelt down upon it, and parting the curtains, looked out, but with the same results as before. In this questionable position she was unfortunately caught by Wilfred Varney.

He was dressed in the grey jacket and the trousers which she had repaired. She had not made a skilful job of her tailoring, but it would serve. The whole suit was worn, ill-fitting, and soiled; but it was whole. That was more than could be said of 99 percent of the uniforms commonly seen round about Richmond. Measured by these, Wilfred was sumptuously, even luxuriously, dressed, and the pride expressed in his port and bearing was as complete as it was naive. He walked slowly up the long room, intending to surprise the girl, but boylike, he stumbled over a stool on his way forward, and the young lady turned about quickly and confronted him with an exclamation. Wilfred came close to her and spoke in a low, fierce whisper.

"Mother isn't anywhere about, is she?"

"No," said Caroline in the same tone, "she's just gone upstairs to see Howard, but she is coming back in a few minutes, she said."

"Well," returned Wilfred, throwing his chest out impressively, "I am not running away from her, but if she saw me with these on she might feel funny."

"I don't think," returned Caroline quickly, "that she would feel very funny."

"Well, you know what I mean," said Wilfred, flushing a little. "You know how it is with a fellow's mother."

Caroline nodded gravely.

'Yes, I have heard how it is with mothers," she said, thinking of the mothers she had known since the war began, young tho she was.

"Other people don't care," said Wilfred, "but mothers are different."

"Some other people don't care," answered Caroline softly, fighting hard to keep back a rush of tears.

In spite of herself her eyes would focus themselves upon that little round blood-stained hole in the left breast of the jacket. She had not realized before how straight that bullet had gone to the heart of the other wearer. There was something terribly ominous about it. But Wilfred blundered blindly on, unconscious of this emotion or of its cause. He drew from the pocket in his blouse a paper. He sat down at the table, beckoning Caroline as he did so. The girl came closer and looked over his shoulder as he unfolded the paper.

"I have written that letter," he said, "to the General, my father, that is. Here it is. I have got to send it to him in some way. It is all written but the last words, and I am not sure about them. I'm not going to say 'your loving son' or anything of that kind. This is a man's letter, a soldier's letter. I love him, of course, but this is not the time or the place to put that sort of a thing in. I have been telling him——" He happened to glance up as he spoke and discovered to his great surprise that Caroline had turned away from him and was no longer looking at him. "Why, what's the matter?" he exclaimed.

"Nothing, nothing," answered the girl, forcing herself to face him once more.

"I thought you wanted to help me," he continued.

"Oh, yes! I do, I do."

"Well, you can't help me way off there," said Wilfred. "Come closer."

He spoke like a soldier already, thought the girl, but she meekly, for her, obeyed the imperious command. He stared at her, as yet unconscious but strangely agitated nevertheless. The silence was soon insupportable, and Caroline herself broke it.

"The—the——" she pointed at the trousers, "are they how you wanted them?"

"Fine," replied Wilfred; "they are just perfect. There isn't a girl in Richmond who could have done them better. Now about the letter. I want your advice on it; what do you think?"

"Tell me what you said."

"You want to hear it?" asked Wilfred.

"I've got to, haven't I? How could I help you if I didn't know what it was all about?"

"You're a pretty good girl, Caroline. You will help me, won't you?"

Her hand rested on the table as she bent over him ,and he laid his own hand upon it and squeezed it warmly, too warmly thought Caroline, as she slowly drew it away and was sorry she did it the moment she had done so.

"Yes, I will help you," she said. "But about the letter? You will have to hurry. I am sure your mother will be here in a short time."

"Well, that letter is mighty important, you know. Everything depends upon it, much more than on mother's letter, I am sure."

"I should think so," said the girl.

She drew a chair up to the table and sat down by the side of the boy.

"I am just going to give it to him strong," said Wilfred.

"That's the way to give it to him," said Caroline. "He's a soldier and he's accustomed to such things."

"You can't fool much with father. He means business," said Wilfred; "but he will find that I mean business, too."

"That's right," assented Caroline sapiently, "everybody has got to mean business now. What did you say to him?"

"I said this," answered the youngster, reading slowly and with great pride, "'General Ransom Varney, Commanding Division, Army of Northern Virginia, Dear Papa'——"

"I wouldn't say 'dear papa' to a General," interrupted Caroline decisively.

"No? What would you say?"

"I would say 'Sir,' of course; that is much more businesslike, and soldiers are always so awfully abrupt."

"You are right," said the boy, beginning again, "'General Ransom Varney, Commanding Division, Army of Northern Virginia, Sir'—that sounds fine, doesn't it?"

"Splendid," said the girl, "go on."

"'This is to notify you that I want you to let me join the Army right now. If you don't I will enlist anyway, that's all. The seventeen call is out and I am not going to wait for the sixteen. Do you think I am a damned coward'——"

Wilfred paused and looked apprehensively at Caroline, who nodded with eyes sparkling brightly.

"That's fine," she said.

"I thought it sounded like a soldier."

"It does; you ought to have heard the Third Virginia swear——"

"Oh," said Wilfred, who did not quite relish that experience; but he went on after a little pause "'Tom Kittridge has gone; he was killed yesterday at Cold Harbor. Billie Fisher has gone and so has Cousin Stephen. He is not sixteen, he lied about his age, but I don't want to do that unless you make me. I will tho, if you do. Answer this right now or not at all.'"

"I think that is the finest letter I have ever heard," said Caroline proudly, as Wilfred stopped, laid the paper down, and stared at her.

"Do you really think so?"

"It is the best letter I——"

"I am glad you are pleased with it. Now the next thing is how to end it."

"Why, just end it."

"But how?"

"Sign your name, of course."

"Nothing else?"

"What else is there?"

"Just Wilfred?"

"No, Wilfred Varney."

"That's the thing." He took up a pen from the table and scrawled his name at the bottom of this interesting and historical document. "And you think the rest of it will do?"

"I should think it would," she assented heartily. "I wish your father had it now."

"So do I," said Wilfred. "Maybe it will take two or three days to get it to him and I just can't wait that long."

Caroline rose to her feet suddenly under the stimulus of a bright idea that came into her mind.

"I tell you what we can do."

"What?"

"We can telegraph him," she exclaimed.

"Good idea," cried Wilfrad, more and more impressed with Caroline's wonderful resourcefulness, but a disquieting thought immediately struck him. "Where am I going to get the money?" he asked dubiously.

"It won't take very much."

"It won't? Do you know what they are charging now? Over seven dollars a word only to Petersburg."

"Well, let them charge it," said Caroline calmly, "we can cut it down to only a few words and the address won't cost anything."

"Won't it?"

"No, they never charge for that," continued the girl. "That's a heap of money saved, and then we can use what we save on the address for the rest."

Wilfred stared at her as if this problem in economics was not quite clear to his youthful brain, but she gave him no time to question her ingenious calculations.

"What comes after the address?" she asked in her most businesslike manner.

"'Sir.'"

"Leave that out."

Wilfred swept his pen thru it.

"He knows it already," said Caroline. "What's next?"

"'This is to notify you that I want you to let me come right now.'"

"We could leave out that last 'to,'" said Caroline.

Wilfred checked it off, and then read, "'I want you—let me come right now.' That doesn't sound right, and anyway it is such a little word."

"Yes, but it costs seven dollars just the same as a big word," observed Caroline.

"But it doesn't sound right without it," argued the boy; "we have got to leave it in. What comes after that?"

Caroline in turn took up the note and read:

"'If you don't, I'll come anyhow, that's all'"

"You might leave out 'that's all.'" said Wilfred

"No, don't leave that out. It's very important. It doesn't seem to be so important, but it is. It shows—well—it shows that that's all there is about it. That one thing might convince him."

"Yes, but we've got to leave out something."

"Not that, tho. Perhaps there is something else. 'The seventeen call is out'—that's got to stay."

"Yes," said Wilfred.

"'The sixteen comes next.' That's just got to stay."

"Of course. Now, what follows?"

"'I'm not going to wait for it,'" read Caroline.

"We can't cut that out," said Wilfred; "we don't seem to be making much progress, do we?"

"Well, we will find something in a moment. 'Do you think I am'——" she hesitated a moment, "a damned coward," she read with a delicious thrill at her harsh, vicarious wickedness.

Wilfred regarded her dubiously. He felt as an author does when he sees his pet periods marked out by the blue pencil of the ruthless editor.

"You might leave that out," he began, cutting valiantly at his most cherished and admired phrase.

"No," protested Caroline vehemently, "certainly not! That is the best thing in the whole letter."

"That 'damn' is going to cost us seven dollars, you know."

"It is worth it," said Caroline, "it is the best thing you have written. Your father is a General in the army, he'll understand that kind of language. What's next? I know there's something now."

"'Tom Kittridge has gone. He was killed yesterday at Cold Harbor.'"

"Leave out that about"—she caught her breath, and her eyes fixed themselves once more on that little round hole in the breast of his jacket—"about his being killed."

"But he was killed, and so was Jahnny Sheldon—I have his uniform, you know."

"I know he was, but you don't have to tell your father," said Caroline, choking up, "you don't have to telegraph him the news, do you?"

"No, of course not, but——"

"That's all there is to the letter except the end."

"Why, that leaves it just the same except the part about——"

"Yes," said Caroline in despair, "and after all the work we have done."

"Let's try it again," said Wilfred.

"No" said Caroline, "there is no use. Everything else has got to stay."

"Well, then we can't telegraph it. It would cost hundreds of dollars."

"Yes, we can telegraph it," said Caroline determinedly, "you give it to me. I'll get it sent."

"But how are you going to send it?" asked Wilfred, extending the letter.

"Never you mind," answered the girl.

"See here!" the boy cried. "I am not going to have you spend your money, and——"

"There's no danger of that, I haven't any to spend." She took the letter from his hand. "I reckon Douglass Foray 'll send it for me. He's in the telegraph office and he'll do most anything for me."

"No," said Wilfred sternly.

"What's the reason he won't?" asked the girl.

"Because he won't.

"What do you care so long as he sends it?"

"Well, I do care and that's enough. I'm not going to have you making eyes at Dug Foray on my account."

"Oh, well," said the girl, blushing. "Of course if you feel that way about it, I——"

"That's the way I feel all right. But you won't give up the idea of helping me, will you, because I—feel like that?"

"No," answered Caroline softly, "I'll help you all I can—about that letter, do you mean?"

"Yes, about that letter and about other things, too."

"Give it to me," said the girl, "I will go over it again."

She sat down at the desk, and as she scanned it, Wilfred watched her anxiously. To them Mrs. Varney entered. She had an open letter in one hand and a cap and belt in the other. She stopped in the doorway and motioned for some one in the hall to follow her, and an orderly entered the room. His uniform was covered with dust, his sunburned, grim face was covered with sweat and dust also. He stood in the doorway with the ease of a veteran soldier, that is, without the painful effort to be precise or formal which marks the young aspirant for military honors.

"Wilfred," said Mrs. Varney, quickly approaching him, "here is a letter from your father." She extended the paper. "He sent it by his orderly."

(To be continued.)

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Grange

NEW GRANGE EDITOR

State Lecturer R. P. Kester Takes Charge of Our Grange Department

We take great pleasure in announcing that we have secured the services of Mr. R. P. Kester, the newly-elected Lecturer of the Pennsylvania State Grange, as our Grange Editor. Mr. Kester will have complete charge of this department, and will give the benefit of his wide experience in farm life and his close touch with grange activities to the building up of a strong, active and influential grange department. His travels over the state, and his personal touch with the work of subordinate and Pomona, as well as the State Grange, will insure the latest and most important grange news matter, and his experience as a farmer and farmers' institute lecturer will insure accurate and reliable farm as well as grange leadership.

R. P. KESTER, STATE LECTURER.

Pennsylvania grangers will find this department giving the latest and most complete news of the Order. Our grange readers in other states will find Pennsylvania grangers engaged in fighting for the best things before the Order today, and this department will give much to interest and instruct them. And finally, as the grange is the leading exponent of the farmers' interests in national, state and legislative affairs, all of our readers, whether grangers or not, will find this department one of the most valuable features offered by any agricultural paper.

Mr. Kester is a practical and successful farmer. He has demonstrated his ability and the soundness of his practice by building up what was once a "run-down" farm and making it one of the most productive in the state. While dairying is his specialty, he gives attention to fruit and truck growing and poultry, and makes them all pay. He has been one of the leading institute lecturers of the state for a number of years, and he is recognized as an authority wherever he is known. He wants to make this department as useful and practical, and as close to the people as possible, and he invites notes, queries, comments and news articles from all our grange readers. Address all such matter to R. P. Kester, Grampian, Pa.

Mr. John McSparran will continue to give us his strong, vigorous discussions of timely subjects of grange interest, and in the combination of these two grange leaders we feel that we are giving our readers the best Grange Department to be found in any agricultural paper published.—The Editors.

FOREWORD

To all who are interested in the advancement of agriculture and the improvement of rural conditions, I extend the greetings of the season. To those who have no such interest, I wish to add to the greetings the New Year's wish that, during the year, you may be led to appreciate the duty and need to yourself and to your community of joining in the great work of agricultural uplift. I fully realize that the latter part of this phrase has, of late, been overworked, especially by those who are not farmers or of the farm, but who, looking on from the outside, are filled with a philanthropic desire to reach down and pull the farmer up to a higher plane. While we are properly thankful for the intent, as well as for really helpful suggestions, we realize that real advancement in agriculture and rural conditions is the result of intelligent effort on the part of ourselves. We have learned that self-help is the best help. The farmer will bear many things, but he justly resents a patronizing spirit in those of other vocations.

We are passing out of the individualistic age. Co-operation is the new order in the social as well as in the business world. With the dawning of the new era we realize more fully the greater brotherhood and the need of a closer acquaintance, for,

> "When we know each other better,
> We shall love each other more."

Firmly believing that the grange has been the most potent factor in the advancement thus far made, and in its possibilities for the future, I shall endeavor to make this department of Pennsylvania Farmer one of helpfulness in extending the influence of the Patrons of Husbandry. I wish to enlist the interest and help of all those who believe in the efficacy of organized effort.

I want to bespeak the good-will and active support of all members of the Order. Correspondence is solicited, especially news items, reports of meetings, picnics, special occasions, business enterprises, etc. Will you not help make this one of the best departments of the journal?

To those who are not members of the grange, I invite your questions, criticisms—anything that will give opportunity to spread information concerning the Order and its purposes.

Fraternally,
R. P. KESTER.

ROAD LEGISLATION IN PENNSYLVANIA

The State Grange Legislative Committee, in its annual report to the recent state meeting discussed road conditions in Pennsylvania as follows:

"The question of road building is in a deplorable condition at present. The state has flatly stultified its honesty in passing a law to appropriate 50 cents to the townships for every dollar of cash tax raised by the townships, and then failing to appropriate enough money to meet the obligation. The townships have expended money on their roads, and are now facing exorbitant road taxes to meet the deficiency caused by the perfidy of the state, and even in the distribution of the paltry sum appropriated, the rich townships are given the advantage over the poor ones. The equitable way to apportion the appropriation, if it fell short of the $20 a mile, would be to divide the appropriation by the total number of miles of township road and then multiply this by the number of miles in each township. It will not do to claim that the state had no money. The great corporate wealth of this state is only paying a little fraction of its just share of taxes, and sufficient revenue should have been raised from this source to have paid this legislative contract, and do away with the idea of bonding the state for any purpose.

"The status of state road building is in even worse shape. The manner of procedure in the development of the State Highway Department points to one or both of two things. Either that there is being constructed in our midst an instrument of graft so stupendous that the disgraceful Capitol steal will look like the careless dropping of a penny beside it, or there is an astounding inefficiency on the part of those into whose hands the development and operation of this department has been given.

For example, a small hole was knocked into a tile drain across a state road. The township authorities had no right to repair a state road, so report was made to the State Highway Department. The complaint was forwarded to the superintendent of that part of the state, who, in turn, sent it to the district superintendent, who used an auto and took a joy party 30 miles to see the break. He again reported to the foreman, and he, in turn, hired a man to fix the break while the foreman looked on. And thus was mended a break that any farmer could have fixed for $1 and made money on the job.

"In the face of such a system of inefficiency, in the face of the fact that a $15,000-a-mile road is an outrageously impractical proposition, in the face of the fact that a macadam road, even at such cost, will not stand automobile traffic, it is an astounding proposition that a resolution to bond the state for $50,000,000 should have passed the house with only seven votes against it

"The Sproul bill is to cover about 8,000 miles of road, or 7½ percent of the roads of the state, and at the most liberal calculation, it will not build the half of these roads, and future generations will be taxed to meet the principal and interest, and the roads, with the exception, probably, of the brick laid in concrete, need extensive repairs in a very few years. While we are thoroly convinced that the state should help to build her public roads (they are used by all and should be maintained by all), we should awake to the fact that unless we make a most determined fight against this proposition we are entering upon an era of the most stupendous and reckless extravagance, if not one of colossal graft.

"The roads in which we are most interested are the roads to the store, the station and the market place. We want the low roads stoned and drained, the well-drained roads King dragged and the watercourses kept open. This will give us all good roads, and will not need the services of a civil engineer or an imported superintendent, and we will not need to meet any interest charges on a bonded debt. We demand that the bill which has so often passed the house, levying one mill additional on corporation and personal property for schools and roads, be made law, which law would produce about $7,000,000 annually for these great needs.

"Again we restate the fact that resolutions upon these great questions will not suffice. We must learn still better than we have in the past that we must follow up the promises that are made by those who seek public office, and see to it that they represent the people who elected them. We want representation upon these commissions that are appointed in state and nation to investigate these public issues."

Comment on Road Report

In connection with the report of the legislative committee of the State Grange, I want to call the attention of the readers of Pennsylvania Farmer to the experience that our sister state, New York, has had in connection with bonding the state for road purposes. Since 1905, New York has expended about $49,000,000 in building 3,650 miles of permanent road. Now, in the first place, "permanent road" is a misnomer. There is scarcely any such thing. The top must be redressed in from 2 to 15 years. If the drainage is properly put in, it is practically permanent. The location of a road may be permanent, and even the foundation may be, but the surface will be sure to need a lot of expense every few years at least. How does the account stand in New York on a 50-year basis at 3½ percent, the rate at which they floated the bonds: $50,000,000 bonds at interest at 3½ percent for 50 years, $87,500,000; sinking fund bringing 4 percent in 50 years, $16,377,500. Total cost of bonds, $103,877,500. Number of miles of road built, 3,650; cost per mile, $28,460; estimated cost of maintenance per mile for 50 years, $10,000. Total, $38,460. The estimates of an inquirer who has written up the cost of these roads in New Work state is much higher than $10,000 a mile for maintenance, but the account is bad enough at the estimate here given.

Now, there is in New York State a real estate taxable value per mile of about $100,000, so that it figures out that the cost of a road of that character in 50 years will equal 38½ percent of the entire value of the taxable real estate. Now, if 4½ percent of the roads cost 38½ percent of the value of the real estate of New York, what will be the cost of making permanent roads out of say, one-half of the roads of the state? It is a simple question in arithmetic, and foots up about 4¼ times all the taxable real estate of the commonwealth in 50 years.

Now, this is the history of a state that has tried out this proposition of bonds for building roads. Shall we embark on a similar course? This statement does not include what the other 50 percent of the roads would be costing all those years. It looks like a case of graft and spoils when a State Highway Department insists on such extravagant specifications, when it has been proven that a well-dragged dirt road is good for 8 to 10 months of the year, and the time that the roads are especially bad is in the spring of the year, when the traffic, both for pleasure and business is the lightest. The summer or vacation travel has not begun, and the crops of the previous year have very largely gone out months before. Where they have been held to see how much can be spared from the feeding season, they are held until the feeding season is about closed, when the roads are again good. So it is not absolutely essential that the roads be in first-class shape the entire year, either for the business or pleasure of the people who use the roads. And studies that arrive at the cost of hauling a load over a macadam road in comparison with a dirt road, if they are fair and reliable, must take into consideration the fact that a good manager does not, as a rule, move any large percentage of his crops when the roads are torn up with a flood or broken up with the coming out of the frost; nor does his business suffer in consequence, because there are other duties that can be worked in at such times to good advantage, and which would have to be done sooner or later. Now is the time for our people to get busy against this miserable piece of finance, and not after the constitution has been amended to allow such a disastrous policy.—John A. McSparran.

Veterinary

(Conducted by W. C. Fair, V. S.)

(Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also name and address of writer. Initials only will be published. When reply by mail is requested, it becomes private practice, and a fee of $1 must accompany the letter. This is one of the most valuable columns of the paper and we invite readers to make use of it. Clippings from this column, when properly preserved and classified, would make one of the most valuable medical symposiums a farmer stockman could obtain.)

Cow With Five Teats.—My two-year-old heifer has five teats. Can I remove the extra teat? I have been told that this was an indication of her being a great milker. Is this true? K. F. T., Shermansville, Pa.—A fifth teat is abnormal, and a cow is not quite as valuable with an extra teat as without it. Where one is much smaller than the others, it should be removed or not milked.

Surfeit Buds.—My cow seems in good health but is troubled with small sores on back, which are dry and peel off. I have applied one or two remedies, but they fail to heal the sores. T. E. R., Upper Darby, Pa.—Give her one pound Epsom salts in one quart of water as a drench to open her bowels. Also give her one ounce bicarbonate soda at a dose in feed, three times a day. Apply one part oxide of zinc and five parts of vaseline to sores every day or two.

Imperfect Udder.—I have a fine cow that came fresh the 10th of December and everything apparently normal. She had an immense udder, large enough to hold 40 or 50 pounds of milk, and only gave about one quart of a watery fluid. This is the kind of milk she has given ever since. She seemed to lose her appetite for a few days. I talked with a veterinarian about her and he advised me to give her salts and apply lard and turpentine to udder. I followed his advice, and she is now eating and apparently thriving all right, but does not improve in milk yield. She was never known to be sick before. F. W. W., Rushford, N. Y.—Give your cow one ounce doses hyposulphite of soda and two drams powdered nitrate of potash at a dose in feed, three times a day. Increase her food supply, and her ration should be a milk-making one.

Looseness of Bowels.—I have been watching the veterinary items of each number of your paper, but I have never found anything that seems to fit my case. I have a seven-months-old colt of good trotting stock, and all his relations are healthy animals. My father owns sire and dam. We have two full sisters to this colt which are healthy. He seems to be hearty, but his bowels are always too loose, and is now worse than ever before. We keep his mother for a brood mare and she runs out on pasture. She has not had harness on for over two years, and during the winter we feed her grain along with what she picks while running out. During the past three months we thought it was the mare's milk and that it was too rich, but he seems worse since weaned. He does not appear to be sick, but is very thin. He is fed good oats, timothy hay and corn fodder. He is a great water drinker, and I have wondered if he was not feverish. He had always had a good appetite until he was separated from his mother. He is halter-broke and has run out in pasture until lately. E. L. B. Exton, Pa.—Give colt a teaspoonful fluid extract gentian, a teaspoonful fluid extract cinchona and ½ teaspoonful subnitrate of bismuth at a dose, three or four times a day. If his bowels do not regulate, give him 30 drops of paregoric at a dose, every two or three hours until his bowel movements harden.

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PENNSYLVANIA FARMER

AGRICULTURE
THE KEYSTONE OF
NATIONAL PROSPERITY

ESTABLISHED 1880 PUBLISHED WEEKLY

VOL. 33.—No. 2. PHILADELPHIA, PA., SATURDAY, JANUAR , 1913. 50 CENTS A YEAR.

Headle Dr. T J c313
Rutgers College

Farmers in a Legislative Campaign

By JOHN A. McSPARRAN,
Lancaster Co., Pa.

With the public mind in the condition it is, and farmers' organizations in the forefront of the progressive movement, there is opened up a large field for possible legislative achievement in the near future. The need of legislation that will give to farmers a fair field and no favors in the industrial and mercantile world is now generally admitted. The external conditions are favorable to a realization of at least a part of our program, and it is of vital importance that all farmers should at once be alive to the part that they are to play in securing these laws that mean so much in the future development of the great mass of our people, and in preventing the enactment of other laws that are calculated to further add to the burdens of the people and increase the power of special privilege.

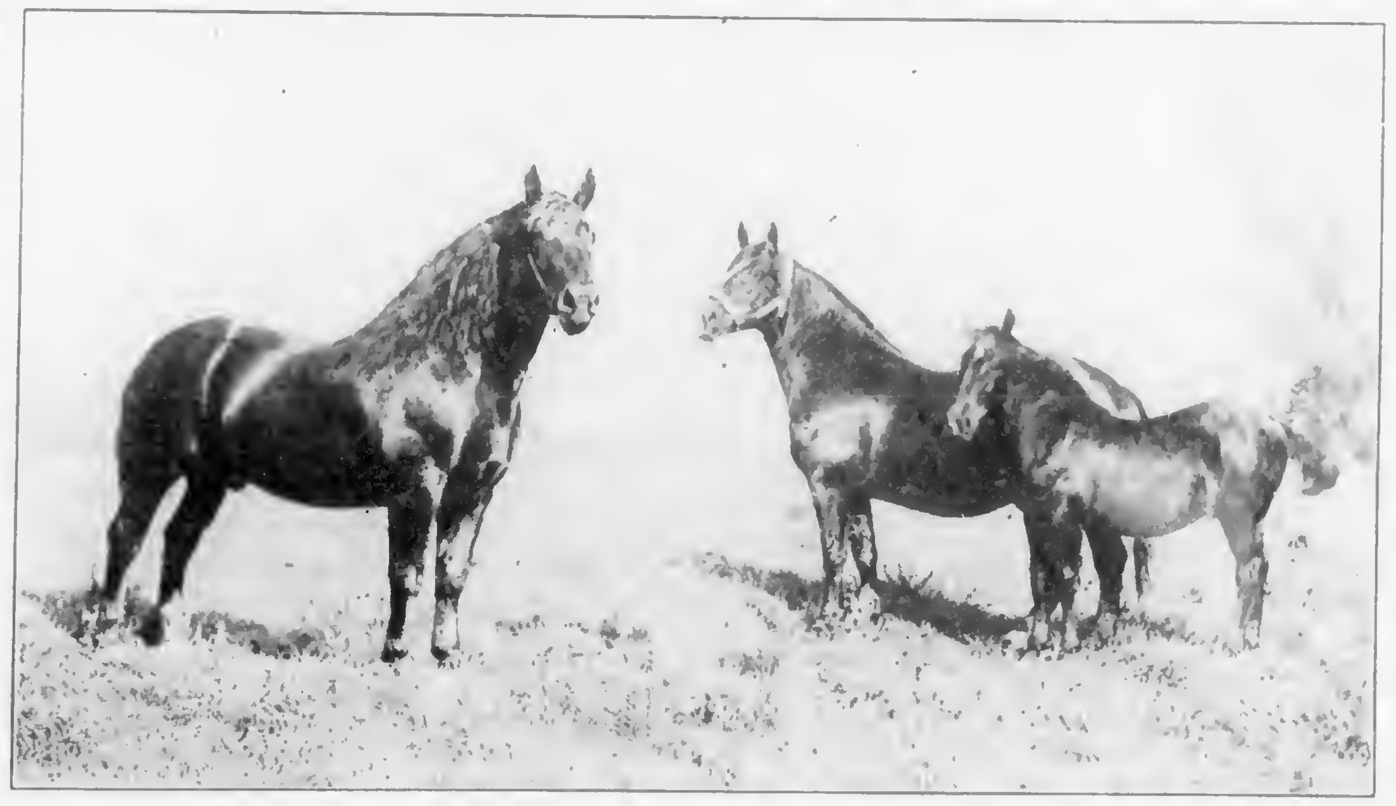
A principal reason why the classes have procured advantages in government as against the masses is that the masses have not given to the effort to secure a square deal the co-operative, organized energy that the special interests have used with such telling effect in governmental affairs. It can not be denied that where the will of the people has been expressed in a clear and definite way, legislatures and executive officers have been responsive to that will. But when there is a part of the people determined and in a unified struggle to accomplish that object, and on the other hand the rest of the people indifferent and with diverse opinions, is it any wonder that the few win out against the many? Many valiant efforts in behalf of the farmers have been wasted thru the indifference of the majority of farmers. Co-operation applies in legislative matters as well as in business.

But it is true of legislatures, as of the rest of humanity, that very many move along the line of least resistance. It is also true that the average man has failed to make the effort necessary to bring about a recognition of his rights, and the legislator, under the same rule, has listened to the demands made upon him, not always on the ground of the justness of the demand, but upon the urgency of the importunity. So, even where public sentiment is practically a unit upon a question, results are not obtained because the people, as a rule, do not insist upon immediate action.

There are issues before us this winter, both state and national, that have been threshed out completely and upon which the public sentiment is unusually unified. Results for the benefit of the people should be attained, and it is the purpose of this article to formulate and outline, if possible, a system of campaign that will make the end desired more certain.

In the first place, it is not so much a matter of importance what may be suggested as a plan of action as it is to act. There is not a doubt that if every farmer in Pennsylvania, or every farmer in any other state, would write to his representatives in the house and senate at his state capitol, and ask for some definite legislative action, their request would receive a consideration never before accorded. And that is all the campaign that would be required.

FORESTRY BUILDING, SYRACUSE UNIVERSITY, SYRACUSE, N. Y.
See Article on Page 2.



A ROYAL FAMILY. EACH MEMBER SHOWING EVIDENCE OF ARISTOCRATIC BREEDING.

But that is just what we farmers do not do: and hence the necessity for a more general order of procedure.

In order that diversity of sentiment arising out of ignorance or a misunderstanding of the law desired may be reduced to practical unity, public discussion of the question at issue is vital. Of course, where there is an organization such as a grange or farmers' club, this discussion is easily arranged for and, as a rule, we think that members of these organizations do debate these subjects at some length. But there is a wider opportunity that should not be overlooked, and that is the farmers' institute. Not less than half the time of each farmers' institute this winter should be taken up with the consideration of these public affairs and their relation to the prosperity of the farmer. This should be done not only because of the relative importance of these subjects, but also because more people are open to conviction on those questions than to methods of farming. Methods of farming are so largely local questions, but some good sane legislation on the subject of road building and maintenance, for instance, would be applicable in every section and in every locality. And the best part of the community discussion of public questions is that it leads back of the particular bill or law, and, if it becomes the practice of a community, such discussion leads to the selection of candidates who will be pledged before they go to the legislature at all. If there is an organized discussion of any question simultaneously over the state, it lays a splendid foundation for favorable results.

Next to this in importance we would place the messenger. When you consider the amount of work that the legislator has to go thru with, if he attempts to do his work at all conscientiously, you must realize that on many subjects he would be made more able to serve his constituency, if, after the folks at home had arrived at a conclusion as to what they wanted, they would have a well-qualified member of the community go and talk over the matter with those who represent them. A great number of legislators would appreciate such a visit and be only too glad to use the information thus obtained in discussions in committees or on the floor. The conscientious legislator or congressman is a very busy man, and it is not possible for him to give each subject that comes before him a detailed study, and work out a line of argument. So he must either take a general view of the question as he hears others discuss it, or someone must furnish him with the necessary argument. This is no reflection upon the ability or the integrity of the legislator, but it is a simple necessity on account of the limit of human endurance and human strength.

But if the personal visit is not possible in every case, the personal letter is possible and is always in order. It is valuable in a legislative campaign, not only because of the ideas expressed or data contained, but also because of the element of personal interest. If the person to whom the letter is sent is an honest public servant, he will appreciate the fact that back of him is an interested and wide-awake constituency, and if he is a tool of special interest or a weak-kneed follower of the majority, there are few things that will stir him to consistent action like a lot of letters from "the folks back home." Political bosses and political machines are not intrinsically strong, but their strength seems practically irresistible because of the apathy of the great rank and file. Let the people as individuals become aroused upon a subject, and the strongest political organizations will either take to cover by adopting the slogan of the people, or will be crushed before the impact of a determined popular will. Write letters. Write concisely and write politely.

I hesitate to include petitions as a helpful part of a legislative campaign. Where the names attached are known to the legislator, the petitions have weight, of course. But the getting of signatures to all sorts of petitions has been so much abused that these signed appeals do not show the strength that they ought. Many persons will sign a petition just because they are asked to do so, and it has often been found that the same person has signed petitions on both sides of a controversy. Surely then, petitions are not to be compared with personal letters, altho they are not to be altogether discounted.

Finally, no legislative campaign is complete without a good champion on the floor of each house. A loyal member who understands the handling of parliamentary strategy is invaluable in procuring results in legislative bodies. Worthy Master Creasy, of the Pennsylvania State Grange, will be remembered as a legislator, not only because he was an eminent champion of the people, but because he was a parliamentary strategist to an extent that won the admiration of even those who had most reason to fear his generalship. And half the fight is to keep a question always in a favorable position, to be always ready and never allowing an opponent to find one asleep at his post.

We ought to be, and I believe are, entering upon an era of progress in governmental affairs in state and nation, but the danger is that the people who have voted for progress will think that the fight is over and go to sleep. In truth, the real fight against entrenched privilege is only beginning. Laws will have to be enacted and enforced, and possibly prevented from being declared unconstitutional by usurping hostile courts, and if the people are to win, they must be fully awake and must follow their great policies thru legislatures, executive mansions and courts. And if the machinery of government is not suited to the present time, it must be changed until it does fit the present need. The grange and the farmers' club and the farmers' institutes can help win the great fight for which the people stand. The grange is in particularly good position because its organization is well adapted to carrying on legislative campaigns, conferring with executive officers and keeping public sentiment active and cohesive. It is not much that each individual has to do, but that little is very important and should be done on time. We hope it will be done.

A DANGEROUS SWINDLE

One day in the summer of 1911, just as I left the house after dinner for work, a finely dressed gentleman, driving a good team of horses, drove up to the barn where I stood. He began showing a farmers' account book, and tried to take my order for the same at $6.75. He weighed about 225 lbs. The size of his book struck me as so ridiculous, when compared to his own size, that I immediately began to laugh at him. By persistent efforts I succeeded in driving him off. I since learned that he did not stop at any other house on that road, and as it turned out, we had every reason to be thankful for our narrow escape, since he was one of a gang of three who worked the greatest swindle that ever came into Bradford County.

In detail, this is their plan: The three men came to Towanda, the county seat, and rented an office. They then visited one store in each line in every town in the county, and secured a promise from the merchant to redeem coupons to be presented by farmers who should buy this book. This was easy, as the merchants saw a chance to secure a few more cash deals. These three men then, each with a livery rig, drove thru different parts of the county and sold "The Agricultural Log Book" to farmers, giving them at the time of delivery a book of 137 coupons worth five cents each at the stores.

They sold the books at any price, from $6.75 each down to giving them away, the object being, in this case, to get rid of as many as possible in the shortest time. They sold 300 in three weeks. During these three weeks they had been on the still hunt for victims, and had found a number who were induced to buy county rights to sell these books for $300 per county, which amount was to be refunded to the canvasser at 50 cents per book on each book sold up to 600 in each county. The books were to cost the agent $2.25, with the 50 cents rebate; $1.75 each for the first 600, after that $2.25 each, making a net profit on each sale of $4.50. It was easy to secure victims, because they had sold an average of 33 per man each week, counting rainy days.

This meant a handsome profit, and it looked so easy. Some of our most conservative business men went into it. One clothing dealer bought five counties in New York State, a great many of our boys bought two counties, and one man sold his farm to get money to buy two counties.

Well, they took in about $15,000, and left for pastures green. When the boys started out, sample case in hand, to make their fortunes, they soon realized that they had beeen deceived. It was easy to secure the merchants' promise to redeem the coupons, but when they went up against the farmer they soon found that most farmers keep no accounts at all, and for those who do, a 10 cent book is enough. The very best salesman in the lot, and I know personally most of them, sold 17 books in six weeks.

The boys, before going into it, looked up the references of this publishing house, and found them well rated. The most humiliating part of the whole thing is that their scheme is entirely within the law, and not one of the victims was able to find a single place to get a hold of the swindlers, and not one ever realized one cent on a dollar.—L. C. Burroughs. Bradford Co., Pa.

RAISING THE OAT YIELD

Among breeders of live stock it is well understood that in order to grow fine animals of great producing powers there must be some characteristics in the parent stock, or better still, in several generations back of both parents. That this same rule applies to the different crops of grain is not so well appreciated.

The oats we are growing for seed purposes have been subjected for a number of years to a rigid process of selection and breeding, and instead of deteriorating, as oats usually do when grown by the average farmer, they have steadily improved. They always give a high average yield for the season, producing last year over 70 bushels an acre, seeded at the rate of one and a half bushels. We sow them thin so as to give the clover seeding a better chance.

When the crop is being cut, a number of men follow the binder and select from the standing grain the largest and most vigorous stalks, the intention being not to pick any head with less than 90 kernels. This work can be done best while the cutting is in progress, as the large heads can be seen better when they are standing than when in sheaf, and by following the binder one can reach in far enough to gather them without mauling the grain, as would otherwise happen if men were allowed to go thru the standing crop.

Enough selected heads are gathered to make seed for a few acres, and the grain is sown by itself on a plot of rich, well-prepared soil, which furnishes seed for the next season and the heads that are to be selected for the next seed plot.

It is remarkable what a strong, vigorous growth of straw is gotten in this way, and what uniformly large, well-filled heads of plump grain. Of course, good soil, a well-prepared seed bed and the weather are the great factors influencing the yield of the crops, but the proper selection of seed is most important.

When cutting our oats we put them up in small, round shocks of six and eight sheaves. With an extra sheaf we cap the shock, as we can protect the grain in this way from the rain and dew and keep it a nice bright color. Round shocks stand better than long ones, and if made small dry out quickly.

In the large grain-growing districts, where oats are sold for feeding purposes, it is no doubt a great economy of time to thresh from the shock, but for seeding purposes it is better for the shock to go thru the sweating process, either in the barn or in the stack, before it is threshed. A new crop is bound to go thru a certain amount of sweating, either in bin or in the straw, but if it takes place in the bin there is great danger that the oats will become so heated as to impair their germinating power.—T. A. Tefft, Chautauqua Co., N. Y.

THE NEW YORK STATE COLLEGE OF FORESTRY

One of the most interesting questions that has confronted the American public in the last few years is: Will forestry last as a profession?

The clearest and best evidence up to this time for answering this question in the affirmative is the fact that our state legislatures appropriate thousands of dollars each year for the maintenance and establishment of state forest schools, and private schools of forestry are made possible by the most generous bequests from our oil kings, railroad magnates and practical lumbermen.

The State of New York was one of the first to see the necessity of training men as foresters, and in 1898 a State College of Forestry was established at Cornell University, and 30,000 acres of land in the Adirondacks were turned over to the the school to be used as a working field.

Unfortunately the school was closed in 1904, after four years of very successful work, after which the state legislature passed an act providing for the establishing of the New York State College of Forestry at Syracuse University, and the act became a law on May 28, 1911.

The school has for its purpose, not only the training of young men for the profession of forestry, but also the reforesting and handling of waste lands thruout the state and the education of the average layman who may desire to know more about the profession of forestry.

The legislature provided in its original enactment that $4,000 of the original appropriation should be used for the purchase of lands to be used in investigational work in forestry and with this end in view the college has purchased a farm of about 90 acres south of the city to be used as a nursery, and to be known as the New York State Forest Experiment Station. Work has already started at the nursery, and this spring about 400,000 seedlings were set out. Several other lines of investigational work will also be carried on in connection with the New York State Department of Forestry at Cornell University, and with the Conservation Commission of the State of New York.

The school, under the direction of Dr. Hugh P. Baker, offers in itself three distinct courses, all of which are well adapted to fit men for the respective lines of work.—R. T. Gheen.

MOLASSES OF VALUE IN INSECTICIDES

Foreign experiments recently reported to the Department of Agriculture show that with the grape root-worm, the use of molasses—arsenate of lead mixture—6 pounds of arsenate of lead, 2 gallons of molasses and 100 gallons of water—gives superior results, since the inability to cover all the foliage with the spray is balanced by the habit of the beetles seeking the sweet, and also the insects are killed, instead of being driven to other vines, as appears to be the case with other mixtures.

The behavior of the rose chafer toward arsenate of lead alone, or with bordeaux mixture, is similar to that of the root-worm. The use of molasses with arsenate of lead in bordeaux mixture gave the same results as when the arsenate of lead and bordeaux were used alone.

FEDERAL MIGRATORY BIRD BILL

You have done a great service to the public by publishing, in a recent issue of your paper, the excellent editorial entitled "Birds on the Farm," directing the attention of your readers to the importance of the part played by the birds in keeping down insect and other pests. Your remarks about hawks, crows and robins are perfectly accurate, and ought to be pondered deeply by all of your farmer readers. Some of us have never been able to understand how so many farmers contrive to remain so ignorant about the value of these birds. It is a fact, too, that the numbers of these highly useful birds are steadily decreasing, because they are being slaughtered in some states by tens of thousands annually as "game."

Permit me to remind your readers that a certain and complete remedy for these dangerous and intolerable conditions exists in the bill for the Federal protection of all migratory birds which will come up before Congress during the present session. If the members of both Houses are made aware that their constituents are strongly in favor of this bill it certainly will be passed. If it be passed, the Federal Government may be relied upon to see that it is enforced.

It is therefore, the plain and imperative duty of all persons who desire to have our insectivorous birds protected, in order that they may continue their immensely valuable services to the farmer and the consumer, to write at once to their senators and representatives and urge the prompt enactment into a law of the Federal migratory bird bill.—Dr. W. T. Hornaday, New York City.

WINTER LOSS IN FODDER

The illustration on this page tells a story which many Pennsylvania farmers have yet to learn. Every year such a sight as this may be seen almost anywhere, and it certainly points to the need of some change in methods of handling fodder.

It is a well-established fact that fodder exposed to the weather such as is shown, loses, on the average, 50 percent of its feeding value, and after such exposure is worth little if any more than straw. Yet in spite of this, most of the fodder is still wintered out. To excuse this wasteful practice, many farmers will say that they do not have barn room for it and can not afford to build a barn just for fodder. This is probably true, but it is not necessary to construct a complete barn for the purpose. Any good roof will serve to protect and save the loss otherwise sustained by the elements. The accompanying drawing shows a "barricks" which fulfills requirements, and costs very little to build.

It is made by erecting four uprights cut from good straight trees, and a top made weatherproof by sound boards. It can be put together quickly, and will pay for itself within the first year. The roof is not fastened to the uprights, but rests upon pegs, so that by changing the pegs the roof may be raised or lowered at will. Now is the time to build a "barricks," so that this year's fodder can be wintered without a 50 percent loss.

SHORT AND LONG SEASON VARIETIES OF CORN

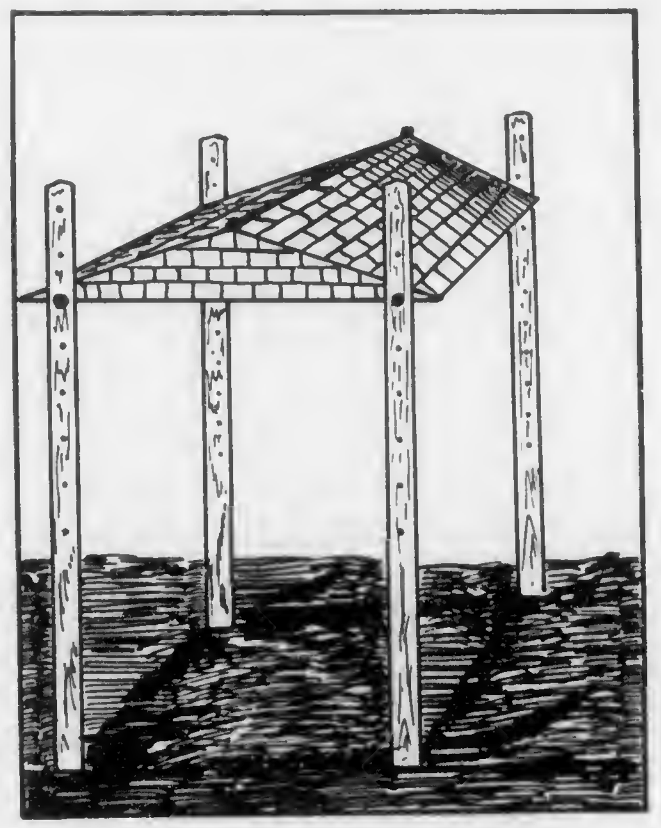
Our experience at Valley Farms has been to stay by and plant the variety of corn that has been acclimated and has been grown with us for some considerable time, not bothering with change of varieties every year or so, which practice we have found to be a bad one, and causing considerable of trouble as to the ripening of the corn crop.

At Valley Farms, we have been planting a variety of corn called Silvermine, which we selected a number of years ago, and said corn had been raised in our county a number of years before we planted it. This corn produces an ear with 16 to 22 rows of corn per ear, the grains being very deep, and cob small, ears ranging 8 to 10 inches in length, and we have learned by experience that such an ear of corn as just described will cure out better and be ready for the crib much sooner than the ear of large cob type. Prior to our planting the above corn we planted a corn of much the same type, and planted it for 18 years with good success, excepting one year in this period which it did not ripen perfectly; this, however, was caused by the corn not being fully acclimated, and an exceptionally short season.

The writer of this article would urge farmers to stay by the varieties of corn that are not of the large cob type, and that have been planted in their locality for a time, ever looking to the improvement of the same, by selecting seed that will yield a good commercial corn, and not paying attention to selecting for show ears. We have knowledge of a variety of corn that has been planted in our neighborhood for 30 to 35 years, and this corn has not failed to give a matured crop in all this time, and is reported to be giving very satisfactory yields up to this present writing. The man whom we have knowledge of raising the above corn, caught the fever of changing varieties of corn, and did so to his detriment. He secured a corn of large type and large cob, and met with repeated failures to cure the same sufficiently for storing away and making palatable feed of it, and he has returned to raising the former type of corn with good success.

The writer would advise farmers to stay by varieties of corn that have been raised in their locality, which give a medium-sized ear, deep grains and small cob, always selecting seed with a view to improving same, and keep away from the hazardous practice of changing seed every year. We think there should be but few failures in raising corn in and around latitude 41, and south of it anywhere in Pennsylvania, to raise and mature corn, if the farmer will but use gumption in the selection of the varieties of corn.

The writer of this article has been raising corn for 27 years, and is located a little north of latitude 41, has changed seed corn just once during this time, and has had but one failure during this time in ripening corn.—E. L. Phillips, Clarion Co., Pa.



A "BARRICKS" FOR HOUSING CORN FODDER.

STORING POTATOES

It is one of the important items in up-to-date, or intensive farming to adapt yourself to the surrounding conditions as you find them when caught with a big potato crop and poor market at digging time, when all wish to sell at the same time and you wish to store for a better market price, and also market when work is not so rushing.

The writer found himself in such a position, and refused 45 cents per bushel for his 7,010 bushel crop from 30 acres, and stored 5,000 bushels in his stone Swiss barn in two stables the whole width of barn. The south and north sides were protected by earth, and on the east and west sides by 1-inch boards up to 15 inches from the ceiling, so I had space to ventilate and keep them as near 40 degrees temperature as possible.

THE WASTE OF FODDER AS SEEN ON MANY FARMS.

When the weather got to 10 above zero, I placed 30 shoats on one side and 10 head of cattle adjoining the shoats, and 5 head of horses on the other side, in order to take the chill out and keep above freezing point, which would occur without this provision. Two openings for throwing hay to cattle and horses acted as a flue for ventilation, but these were always kept covered with hay as a check against too heavy draft. We kept our potatoes in perfect condition and sold them from March to June 13, and they netted me 78 cents per bushel an average for my trouble.

It is important that the potatoes as they are hauled in from the field are run over a screen so as to eliminate them from all earth, and stored immediately as picked so they retain their full weight and plumpness, and in this way there will be about 5 percent loss in weight.

The way we do it is to drive on the barn floor and set our screen along side of a low-down wagon holding 42 bushel crates, and have the screen, 1½-inch mesh, set to an angle so they will just roll lightly down to the storage place below. You can unload as fast as you can handle the bushel crates, and have clean and good solid potatoes in spring.

We have often handled 900 to 1,100 bushels a day with two teams. I do not like to shovel them, as potatoes should be handled as little as possible when storing, and with bushel crates it will not cut nor bruise them, if handled with ordinary care.—John L. Trexler, Berks Co., Pa.

WILMINGTON CORN SHOW

The executive committee of the Delaware State Corn Show, which is to be held in Wilmington, Del., January 16-17, has decided to throw open to the world competition in Class F, which is for the "best 10 ears of corn, of any variety or color, shelling the most grain by weight." The premiums are: First, one Chester white pig, value $10; second, $5; third, $2. The committee has extended the competition beyond the State of Delaware, in order to stimulate a wider interest in corn production and to get as many exhibits as possible for instructional purposes. It is anticipated that a large number of farmers in Maryland, Pennsylvania, New Jersey and Virginia, as well as in Delaware, will enter into keen competition in this class.

Seed testing and selection will form an important feature of the corn show.

FARM LABOR

The difficulty of getting competent help is one of the conditions which are driving many people from the farm who would, under ordinary conditions, prefer farm life. This condition is, it seems to us, an indication that better things are in store for the farmers of the country.

While cheap labor may be employed in some industries where most labor is under supervision and where each laborer has only limited and definite things to do, only the ablest type of labor can be used to advantage on the ordinary farm, as it is practically out of the question on the farm to give very close supervision to labor. Such labor must be trusted alone with valuable animals and machines, it must possess considerable skill in their manipulation and care. Such labor must further possess an earnest desire to do efficient and careful work under the supervision of some overseer or foreman.

We believe that comparatively high wages must be paid before farm labor of suitable quality can be secured. The present scale of wages for this labor is entirely inadequate in view of the demands made upon it in comparison with requirements in other industries. For example: A fireman on a railroad engine receives from $80 to $130 per month, while no greater skill is required to fire one of these engines than to feed and manage a good herd of stock. A street car conductor receives from $75 to $90 per month, and certainly no greater skill or ability is required for such work than to handle three or four horses and a self-binder. At present from $30 to $35 per month and board, or a total of from $45 to $50 per month, is considered very good wages for farm hands.

If the business of agriculture is to compete with other industries, then agriculture must pay as good wages for the same class of work as is paid by the other industries; and the people who use farm products must pay such a price for them as will enable a farm owner to compete in the open labor market. There are some sections where comparatively high wages are already paid, but until the universal wage is higher, labor conditions will not improve very materially.—A. D. Wilson, University Farm.

Horticulture

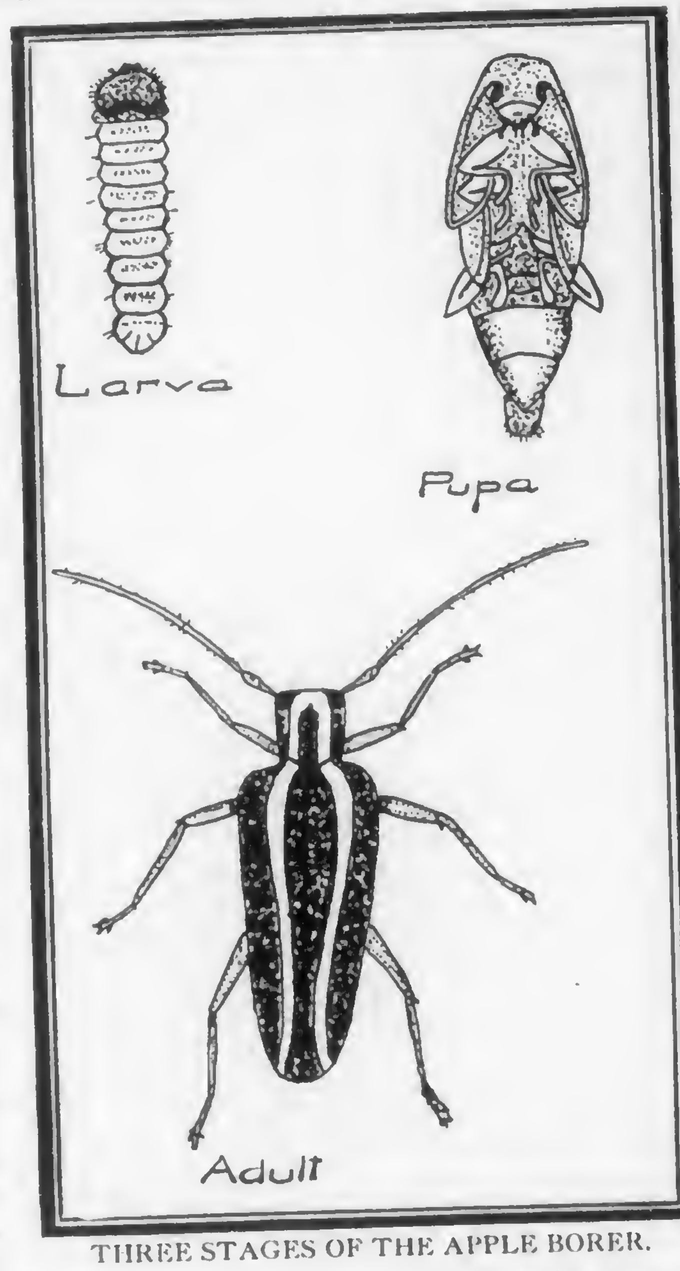
THE ROUND-HEADED APPLE BORER

(Saperda Candida)

The great amount of injury which the round-headed borer has done during the past few years has brought forth a proportionate amount of inquiry as to its characteristics, life history and control measures. Let is be understood that there are two separate species of borers working in the apple, the round headed and the flat headed. But since the round headed sort is the one most often found, this article deals entirely with that insect. Let it also be understood that the borer working in the peach tree is yet another and different species of insect, and hence is different in its character from the round-headed apple borer.

We will start the life cycle with the adult, since she lays the eggs and is directly responsible for the successive stages which follow. This insect is shown in the illustration on this page, and is characterized by the two broad white stripes running the entire length of the back. The beetle when mature is about three-fourths of an inch long and is brown in color; often a dark brown.

In this state the beetles come sometime in June and at once begin laying eggs. These eggs are deposited on the ground, near or at the base of the tree, or more often directly on the bark. They hatch in a short time and the larvae (shown in the illustration) immediately begin feeding upon the bark, working in the outer or softer tissue. During the first year the larvae confine themselves to this soft wood, until their jaws become stronger and they can attack the inner and harder wood. Generally there are two or more larvae working in the same tree, in which case they never use the same channel, nor do they cross channels, each borer gouging out a way for its own exclusive use.



THREE STAGES OF THE APPLE BORER.

At the end of the first year the borer begins to enter the harder wood, and working upward, making a round hole sometimes as long as four or five inches, when it works near the surface to the bark. It again turns toward the heart of the tree and packs the upper part of the burrow with castings, thus making a bed for itself upon which is pupates. The pupa is shown in the illustration. The second winter is passed in the pupal state and in the following spring the insect eats its way to the bark and emerges as an adult. The adult soon mates and the female lays another crop of eggs for another generation of larvae. Thus it requires about three years to complete the life cycle of this insect.

There is one remedy for borers which in all cases will prove efficient. All of several control measures must be adopted and if followed closely fair success may be expected. First of all, the orchard should be kept as clean as possible, since trash and weeds appear ideal places for the adult to deposit her eggs. The female does not care to lay her eggs on bare ground, and will not do so if other places are offered. Hence clean cultivation is a great help in controlling the borer.

The trees should also be mounded in the fall, to help in preventing mice and rabbit injury during the winter and to force the borer to lay her eggs high on the trunk, rather than down near the roots. In the spring these mounds are leveled down, leaving the entrance of the borer above the ground level, so that they can be gotten at easily. A flexible wire is the most efficient tool to use in destroying the larvae. This can be pushed up the channels until the larvae is killed at the upper end. When each trees has been examined and all the larvae have been destroyed, there is nothing to do until next spring.

Just before the adult lays her eggs spray each tree trunk at the base with a strong (.003) solution of lime and sulfur and arsenate of lead. Be careful not to get this spray on the foliage, as it will quickly defoliate the tree. It can do no possible harm on the trunk, however, and will act as a repellant to the beetle. The soil should be dug away to some extent, so that the large roots near the trunk may be sprayed and the soil replaced. The arsenate of lead will poison any larvae that start to enter the tree.

Even with this syraying, however, the trees must be gone over with a wire to destroy any larvae which may have escaped the poison.

SALT FOR ASPARAGUS

I have an asparagus bed, containing over 6,000 plants, planted in spring of 1911, and have this fall applied 12 tons of stable manure and expect to apply a quantity of commercial fertilizers and salt. Please let me know thru your valuable paper the amount of salt to apply to rows 250 feet long, plants 1½ feet apart in row, and rows 4 feet apart. And let me know what ribbon is used (color, etc.) and where I could buy same. I know that some use only common twine, but I want to buy a buncher and use ribbon, with name of grower printed on ribbon, hoping to advertise my product thereby. Give me your opinion on same, and if possible name a ribbon manufacturer in Philadelphia.—Wm. M. Delp, Bucks Co., Pa.

The practice of applying salt to asparagus is an old custom, which was believed necessary, because the native home of asparagus is in salt marshes. The application of salt, however, has been abandoned by the best growers, who have found it of no benefit as a fertilizer to the plant. Salt is often used on asparagus as a herbicide, and in this capacity it is very efficient in eradicating weeds. When used in this way, 400 lbs. per acre will be found to be a good application, but, as before stated, it has no food value. Your idea of tying with individual ribbon is a good one. Red ribbon is most often used and probably best, on account of its attractive appearance. We can not give you names of firms thru these columns, but you can either purchase such ribbon or find out where it is made at any seed dealer or firm carrying general garden supplies.

EASTERN APPLE TROPHY

THE $750.00 PRIZE CUP DONATED BY THE COE-MORTIMER CO.

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Professor Van Deman stated: "I have never judged a set of exhibits that, all things considered, have run closer or higher on the scale of the score card, than in this competition." Mr. Steck, the winner, scored 281.75 points out of a possible 300 (100 for each of the three varieties shown).

Mr. Steck's closest competitor was Mr. Granville W. Leeds, of Rancocas, New Jersey, who scored 279.75 points out of a possible 300.

A striking feature of this competition is that it developed after the prize was awarded, that Mr. Steck, the winner, raised his prize fruit with Coe-Mortimer Fertilizers, which he has used for the past two years; purchasing them in the open market from one of the Coe-Mortimer local agents at Winchester, Va.

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Horticultural Queries.

(Conducted by Prof. H. A. Surface, State Economic Zoologist. Address all queries to Pennsylvania Farmer, Philadelphia, Pa.)

Winter Spraying

This is my first year's experience in spraying. I try and make it show when dry, and should it? Does the lime hurt to be air slacked, or which is better?

Potatoes around here nearly all blighted. They did so very quickly. Ours did not blight; can it be stopped if it should start? I used some solution on them. The tops are largest I ever saw.

What kind of weather seems best for blight to develop? It was very warm, wet and cloudy here, with some sun. I could notice a sort of mould or mildew on under side of leaf; any way, that did the mischief.

Very little spraying has been done in this vicinity, and fruit is not plentiful this year. I can see much good it has done for us.

Would you recommend lime and sulfur for apple trees in preference to bordeaux?—H. A. V., Tioga Co., Pa.

We have received and examined the leaves which you sent, and find the pear leaves infested with the pear-leaf blister mite, and the apple leaves infected with a fungous disease. This leaf blister mite is a serious enemy of the apple and pear. It is best prevented by spraying with lime-sulfur solution while the trees are dormant. I have seen excellent results from this treatment.

The rotting, dry peaches and plums that are permitted to hang on the trees as mummies are undoubtedly the means of carrying the disease germs over, as you suggest. It would be best to pull them off and destroy them after the leaves drop.

Where bordeaux mixture, or any other material, is strong enough to do any damage to the foliage or fruit, it should be weakened. It should not be the aim of the operator to put it on in less quantity, but make a weaker solution, and then give an abundant and thoro spraying with it. A thoro spraying covering all parts of leaf and fruit with a weak solution of the same material, will do more good than a light or necessarily incomplete syraying with strong material.

Potato blight can not be stopped after it has started. The only thing to do is to prevent the blight commencing. After it is well started, the vines should be cut off or pulled before they turn black, in order to prevent the rot germ or blight germ reaching down into the tuber and making rotten potatoes. The potato blight and rot are so bad in the central and western parts of this state because of the warm and damp climatic conditions, which favor the development of blight germs. Nothing can be done to prevent it but spraying before the leaves commence to blight, using the bordeaux mixture. In most parts of this state, spraying has been conspicuously beneficial this year.

I do recommend lime-sulfur solution, dilute, for apple trees in preference to the bordeaux mixture. For grapes and potatoes, I much prefer the bordeaux mixture.

Would you suggest that I spray my young trees when the leaves are off this fall, and then again in the spring? My idea is to keep them in healthy condition.—E. H. K., Rimer, Pa.

Replying to your letter, I can say that if there are no pests present it does not pay to spray young trees during the dormant season, but I would recommend spraying bearing pear, peach, plum and apricot trees with the boiled lime-sulfur solution, either homemade or commercial, tested by the hydrometer at 1.03, or stronger, at least once during the dormant or leafless season, whether they are infested with scale or other pests or not.

The idea that spraying will keep a tree in healthy condition and prevent pests from coming to them is not exactly correct. A tree, altho sprayed, may become badly infested with pests within a few months thereafter. It must be remembered that spraying a tree is somewhat like giving medicine. One would not think of dosing his live stock unless they were really ill. He would look properly after maintaining sanitary conditions at all times, but not give medicine until it is needed. The same may be said of the care of trees. There is much more to be done for the maintenance of trees at all times of the year than for the remedial process of spraying. Proper horticultural practice to help maintain the health and vigor of the tree may be observed at all times; but when young trees are fairly vigorous, healthy, and not diseased nor infested, it is not advisable to go to the expense of spraying them, as sufficient results can not be obtained to justify it.

PEST CONTROL

Prof. H. A. Surface, State Zoologist, has just issued a bulletin, entitled "Pests of Field, Garden and Truck Crops." This bulletin should be read and studied by every farmer, since it contains the latest advice on the control of pests attacking the various economic plants, and gives directions as to the use and character of the different insecticides which are invaluable to those who grow crops of any kind. Send to Harrisburg for this bulletin at once.

The Delaware State Station has always been active in horticultural work, and has given much time and money to disease control work. Bulletin 97 of this station deals with spray materials and formulas, and should be read by every plant grower. Send to the Experiment Station, at Newark, Del., for this valuable bulletin.

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The Dairy

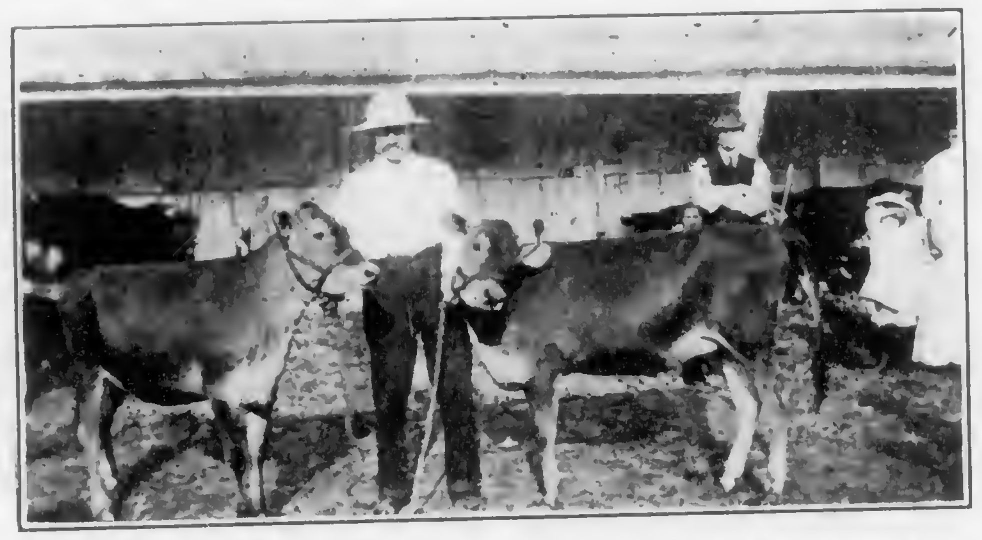
THE MILK PAIL AND ITS CARE

The pail used in milking is of prime importance in the production of clean milk. An open pail with an opening larger than the lower part of the vessel, of course, gives the best opportunity for the milker to "hit the pail," but it also gives dirt of all kinds the best chance to get into the milk as it is being drawn from the cow. There are pails now made, tapering toward the top. Others are partly covered, so that dirt does not have the same chance to enter. Some have a hood extending so far over the top of the pail that it is almost impossible for anything to fall into the vessel. These all have their advantages, and one who realizes the necessity of having absolutely clean milk will choose the one he can use to the best advantage.

The more nearly the top is closed the harder it will be to see that the pail is kept clean, and a dirty pail may be a greater source of contagion than the dirt, straw and hair which falls into the milk. The pail should have the seams filled with solder, so that the inside of the pail is smooth. It is easier to solder on the outside, and often the seams on the inside are left open, and very soon a yellow deposit of milk and cream settles there and ordinary washing will not remove it. Here the microbes multiply between milkings and seed the warm milk with a crop of bacteria which soon causes the milk to change flavor. Milk pails are sometimes made with double bottoms, to prevent rusting. The inside bottom is made of zinc. This, after a time, gets a hole in it, and then it becomes a veritable hotbed for propagating the microscopic plants.

When the warm milk comes into the pail the air under the false bottom expands, as one can notice by the bubbles rising in the milk. When the milk cools, the air under the false bottom contracts and draws milk between the bottoms, where it can never be washed out. Here it putrifies and is a constant source of contamination. The writer was acquainted with a case where a high-priced milk pail thus acted as a source of contamination for a long time before it was discovered where the microbes came from. When the hole was discovered it was impossible to get it soldered so that no milk could get between the bottoms until a hole was made in the outside one. Sometimes strips of zinc are soldered across the bottoms of pails to prevent rusting. by the unequal oxidizing power of the metals. Here the same thing is likely to occur, and hide an enemy which is worse than a hole in the pail.

A fruitful source of bacteria in milk is the strainer. This should be a useless appendage to a milking establishment, but too often it is not. Brass strainers are sometimes placed on the pail. These are often so filled with dried milk that the milk flows thru but slowly. Often a cloth strainer is used and washed after each milking. If this is not washed carefully with cold or warm water, then with soap and hot water, and then thoroly scalded, it becomes a prolific source of contamination. Anyone who thinks it an easy matter to wash a cloth strainer clean, or even a pail, should notice the odor which develops when, on a cloudy, muggy day, the strainer has failed to get dry, or the pail has been covered since the last milking. The strainer, after scalding, should be hung in the sun to dry. The pail should be scalded and not wiped, then placed in the sun to dry and air. Other vessels used in connection with the milk should be cleaned with the same care.—Wm. G. Owens, Union Co., Pa.



AS NEARLY ALIKE AS TWO EGGS, BUT NOT STORAGE EGG QUALITY.
Twin Jersey Heifers Shown at Lancaster County Fair by J. Aldus Herr, Lancaster County, Pa.

MILK PRICES

With the beginning of the New Year there is a general falling off in the price of market milk at the farm end. Many dealers paid $2 in December, but most of them have dropped below that figure now. Some paid as high as $2.10 in December, and there were reports of higher prices. Of higher rates, however, I am not certain. The Borden Condensed Milk Company is the controlling factor in prices in a large portion of the East, and this company paid in December $1.80 for "C" milk and $1.90 for "B." I suppose that by far the larger portion of milk was purchased at this price. Supplee's folks paid $2 for all milk that was offered them, but it was all good milk. There are a few concerns that buy on the fat test for milk, and their prices varied greatly. Milk that tested 3.5 to 4.5 generally brought $1.90. In some cases, 4.5 milk got a bonus of 16 cents. There were a few cases of milk testing as low as 3 percent without a cut being made in price. There is no uniform price for milk, and it would be pretty difficult to make any fair quotation on prices.

January prices are probably 10 cents a hundred lower than those for December. Borden's folks give $1.75 and $1.85 for "C" and "B" milk, respectively. Supplee's pay $1.90, and the other concerns have dropped a little, so far as I have learned. It does not seem that the price will again advance this season. There has been a shortage for the greater part of the season so far, but now there is as much as seems to be needed. Feeds are a little easier, and dealers in milk will take advantage of this fact to lower prices of milk. It is not to be understood that the retail prices are to be lowered because the country prices go down. That will not happen, even when the country price goes to $1 a hundred. With milk at $2 in the country and selling at eight cents retail, it takes good management to make any money. If the retail price is nine cents, as it is for most of the milk purchased here, there ought not to be any difficulty in making good money. As soon as the country price drops a little, there is a good margin, even at eight cents; but most dealers do not sell for that, even in summer.—H. H. Lyon, Chenango Co., N. Y.

NOW IS THE TIME FOR ACTION

The Oleo Fight

It is expected that the Haugen bill will be reported to the House early in January. Then an attempt will be made by the friends of oleomargarine to substitute their bill (the Lever bill) for the Haugen bill. If they can muster strength enough to do this, they will probably have strength enough to pass it.

If their bill becomes a law it will mean many millions of dollars profit to the manufacturers of oleomargarine, for it will give legal sanction to their counterfeiting genuine butter. If they are allowed to put their product upon the market in every way disguised as butter, they know that a great deal of it will be sold as butter for butter prices, which will mean a very large profit to them and to the handlers of their goods. Every pound of this disguised imitation disposed of to those who desire to consume genuine butter, deprives dairymen of their legitimate market for that amount of butter.

The Lever bill is a direct attempt to substitute a cheap by-product of the packing house for genuine butter. If the packers and cotton oil interests succeed in this attempt they will have dealt a paralyzing blow to the legitimate dairy interests of this country. They will use every means at their command to do this. Their paid emissaries are now, and have for some time, been busy among Congressmen, enlisting their support for the Lever bill. If the dairymen and consumers whose interests are at stake are to prevent this bill from becoming a law, they must at once actively interest themselves in the matter. Congress will not pass the Lever Oleomargarine Bill if it is convinced that the sentiment of the country is strongly against it. If every consumer, who is interested in honest products, sold for just what they are, as well as every dairyman and farmer will at once write their Congressman urging him to use his best efforts to defeat the Lever bill, and have passed the Haugen bill, we can easily convince Congress that the people of this country do not want the dairy interest severely crippled for the benefit of the big packers.

Do not wait. Write your Congressman today. Just a line or two is enough. Simply ask him to support the Haugen bill in the interest of common honesty and fairness.

N. P. HULL,
Secretary National Dairy Union.

DOES IT PAY TO SHRED STOVER?

An article under the above heading appeared in Pennsylvania Farmer of December 7th, by C. J. Fillweber. In this article, the author makes a careful and fair estimate of the cost, advantages and disadvantages of the various ways of husking and taking care of the corn crop. His deductions are comparatively correct, but the all-important feature in the process, the one which has given me the most trouble, he has not touched upon, and that is the taking care of the shredded fodder. Before I ever saw a shredder, I bought a 14-inch ensilage cutter with ample power, and cut all my fodder. But I soon discovered that it was impossible to keep it from heating and spoiling if any quantity was put in the mow together.

I had a barn floor 16 by 100 feet, and by using several sections of carrier I could begin at the back end of the floor and fill to a depth of about four feet, taking care not to tramp the fodder. By taking off a section at a time, the fodder could be kept sweet and good. This is the only method by which I have been able to get the full value out of fodder. It must be kept from heating or it is ruined. One year I cut all of my dry fodder and packed it in a silo, but a great amount of it spoiled, altho I took great pains and arranged a tank of water so that I could turn a spray on the cut fodder as it fell from the cutter. I found it a problem to get the quantity of moisture, just as Nature would distribute the moisture in the green corn ready for the silo. When the first huskers and shredders came to our neighborhood, many farmers used them and usually ran the fodder into the mows, and I have seen the steam coming from the cupolas of barns like the smoke from the funnel of a steamboat. I have husked and shredded six acres of heavy corn by using blowers and scattering the fodder over the mows and the barn floor to a depth of not more than three or four feet. I do not consider the silo method practical for dry fodder, and there is too much uncertainty about the moisture problem to stack or put in a large quantity without danger of loss. I have seen it put up in small bales, but for general farm use I do not think that this would pay. If there is any other successful method now in use, I would be glad to know of it.—Wm. R. McGill, Crawford Co., Pa.

VALUABLE DAIRY ASSOCIATION REPORT

The 14th annual report of the Pennsylvania Dairy Union, for 1912, is now being distributed. It contains some very excellent papers by such men as Loton Horton, of New York; F. A. Wills, of Philadelphia, and L. P. Bailey, of Ohio. Members of the Union may secure this report by sending the 1913 membership fee of $1 to Secretary, Pennsylvania Dairy Union, State College, Pa. The 1913 convention will be held at Harrisburg, January 21-23, 1913. For program and prize list, address the Secretary.

A GOOD PRODUCING HERD

It was my pleasure within the past month to visit a herd of 42 grade Holstein cows in New York State that had been picked up, one or more in a place, and were being worked for the production of milk for the city market. It was quite interesting to note that the way this herd was gotten together is open to any and every man at all times, provided he uses the same skill and judgment in selecting, and has the nerve to pay the price. I was there at milking time, 4 P. M., and we weighed the milk from each individual cow. They had been milked at 5 A. M., so we weighed the shortest milking, with the result that they averaged 22½ pounds per head for the one milking. Had we weighed the morning's milking, I am quite sure that the average for the day would have gone up towards 50 pounds per head, or about one ton of milk.

I was informed that the owner paid $130 per head for them, on an average. The following question immediately came to my mind: How many common, average cows, such as are continually being offered at public sales in all dairy localities, would have to be gotten together to produce the above total result, and what would they cost? I will leave the reader to answer. I am afraid the answer would not look well in print.

Do a little figuring here for yourself. There is no doubt, however, that in the latter case there would have been twice the number of mouths to be fed. It should be stated that while the majority of these cows were recently fresh, there were several of them that had been in milk several months, and two that are due to freshen again in the later part of winter.—Dr. M. E. Conard, York Co., Pa.

SILAGE FROM DRY CORN

Since there seems to be considerable doubt as to the keeping and feeding qualities of corn silage when put in after becoming unusually dry, I desire to give my experience this year, which has demonstrated that a good quality of silage can be made from partially cured fodder.

Our corn was late and badly frosted before cutting, and was harvested in seemingly a very dry and crisp condition, much more so than any previous season, and fearing the result, we led the garden hose from our running spring hydrant and allowed the full stream to flow into the blower, when in operation, thus wetting the silage evenly and thoroly as it passed thru the cutting machine. Most of this corn was cut soon after the killing frost and lay several days in the field, and one field of about 7 acres—planted, cut and shocked for husking—was, after standing 10 to 20 days, cut into the silo—ears and all, treated to a shower bath on the way, as above, and, I am pleased to say, is coming out in fine condition—not a particle of waste or loss—is unusually sweet and palatable, and is well relished by all our animals. In fact, we call it the best silage we have yet used. In weight it is much lighter; a basketful contains only 20 to 22 pounds, as against 30 to 35 pounds in previous years. We feed by measure, however, weighing often, and our cows—several of which are fall freshening—are doing nicely—B. W., Crawford Co.

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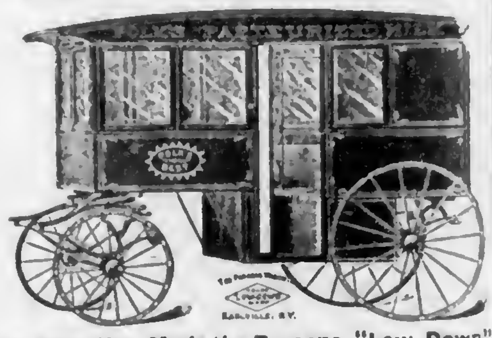

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Young Holstein Bull, born June 21, 1912, sire Albina Butter Boy, a New York State Fair champion. Dam an A. R. O. daughter of King of the Pontiacs, her dam 21.87 lbs. butter. Bull is light colored, and a dandy, bred for individuality and production. Price $175. He is backed by the largest producers of the breed.
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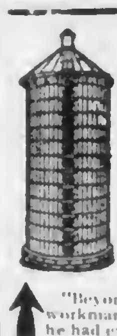

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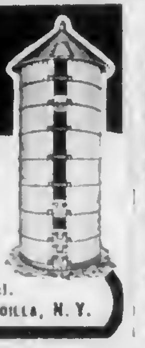

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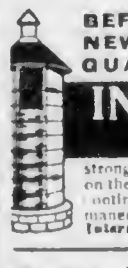

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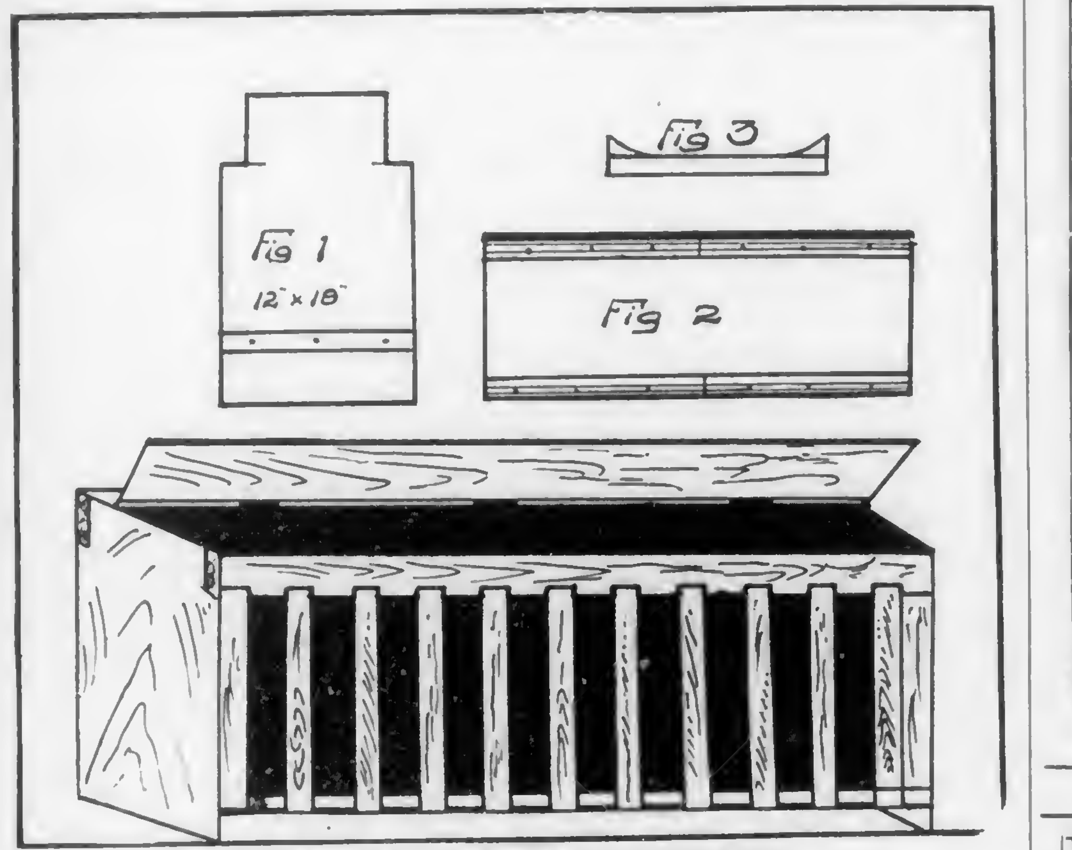
Poultry

A CONVENIENT FEEDER

It matters not whether one is still in favor of warm mashes for hens in cold weather, or whether he has adopted dry feeding, such an appliance as is here described will many times be found very convenient. Feeding mash, meat scraps, cooked vegetables, cracked corn and the like in open pans, on box covers or boards results in the dishes being upset, the food scattered on the ground, trodden upon by the hens or mixed with their droppings, all of which is undesirable.

I will give a description and method of building a very convenient feeder which I have used for some time. By the description and drawing it is very easy for anyone handy with a hammer and saw to build one. Mine are 8 feet long, 20 inches high and 12 inches wide, and will accommodate 32 hens, or 48 half-grown chicks, without crowding. Calculate 4 hens to each foot (that is, 2 on each side of the feeder) or 6 chicks, and build any length desired. It requires but little more labor to build a long one than a short one, tho a five or six foot feeder would be more convenient for one person to carry.



A CHEAP AND SATISFACTORY FEEDER.

Of dressed lumber, seven-eighths or an inch thick, it requires two pieces 12 by 19 inches; one piece, 12 inches wide and 8 feet long; one, 9 inches by 8 feet; three, 4 inches by 8 feet, and 16 lath, which are 2 inches by 4 feet. Cut notches one by four inches in the top corners of the two 12 by 19 end boards and nail cleats below a line five inches from the bottom ends, as shown in Fig. 1. Bevel four lath and nail them on the 12-inch by 8-foot board, the thick edges flush with the edges of the boards, as shown in Fig. 2. These will prevent the feed being raked off the sides. An end view of the bottom board is shown in Fig. 3. Then set up the end boards, lay the bottom board on the cleats and nail them with light nails; also nail thru the end boards into the ends of the bottom board with long nails. Then a four-inch board is to be nailed into the notches at the top on each side, and the frame is made. Cut lath into 12-inch pieces and nail on each side. The easiest way to do this is to lay the feeder on one side, leave the width of the lath and nail a lath, right thru. Use small nails for the tops of lath, so that none will protrude into the inside of the feeder. No. 2s will do for top, Nos. 3 or 4 for the bottom. Finish both sides alike, and you are ready for the cover. Nail a four-inch strip on the top at one edge, and hinge to it a board nine inches wide. This allows the lid to project over the side one inch making it convenient to open. Fig. 4 shows a front view of the completed feeder.

If the lid were the full length of the feeder it would, when thrown back and having several fowls alight on it, be liable to tip the feeder over on its side. Two or three blocks nailed on top for the lid to rest upon, allowing a backward inclination of 30 or 40 degrees, will enable one to close it quickly.

I built one with a top shaped like Fig. 5, but the opening was too narrow. If one ever expects to use the feeder for young chicks, he could use slats three inches wide, and leave two and one-half inches between them, and that would nicely accommodate an ordinary sized hen at each opening. But quite a good-sized chick will squeeze thru a two and one-half inch opening and get inside. If built for chicks alone, I would make the spaces between the lath only one and three-quarters inches, use a 10-inch board for the bottom, and make it about 16 inches high.—A. E. Vandervort, Delaware Co., N. Y.

FROZEN AND DRIED EGGS

Frozen and dried eggs intended for human consumption are largely used for cooking purposes where inferiority may be concealed, as in baking cakes or making custards, omelets, pies, etc. The traffic in eggs sold for drying and freezing has greatly increased in the past few years. Strictly fresh marketable eggs in the shell command a high price, and there is difficulty in meeting the demand for them; but large quantities of questionable eggs, often bought at very low prices, have been brought out for cooking purposes by disreputable firms, being preserved by freezing or drying until ready for use. Some dealers, however, manufacture a satisfactory product by the use of good eggs handled under proper conditions.

There is no objection to drying or freezing good eggs under proper sanitary conditions; in fact, there are some advantages to be gained by preserving eggs in this manner, altho the manufacturing processes devised by man, as a rule, do not improve the quality of Nature's work. Conditions of modern life and commerce must, however, be met, and dried eggs, or eggs in a frozen condition, may be shipped long distances, and require less space for transportation and storage than do eggs in the shell.

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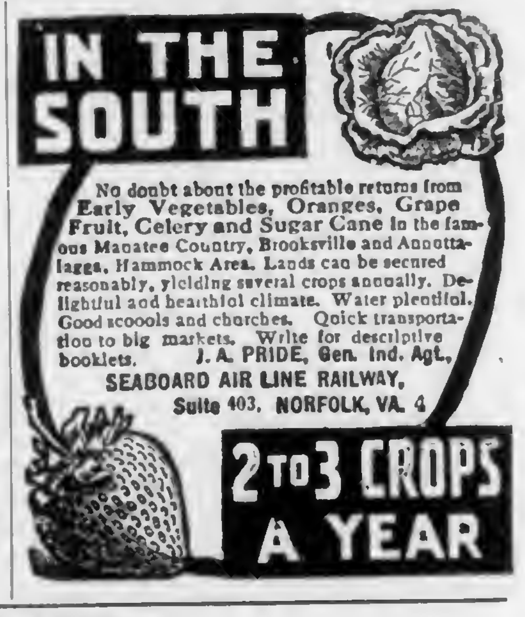
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Possibilities of Sheep Industry in Pennsylvania.

By Prof. W. H. TOMHAVE, State College, Pa.

Every class of live stock has its period of prosperity and its time of depression. This is equally as true of sheep as of cattle, hogs and horses. There are no intervals or set times when such conditions exist, and for that reason no prophet or other person can predict when such times come.

Pennsylvania has long been recognized as one of the leading sheep states of the Union. The sections in which prominent flocks, both large and small, have been located have no doubt changed from time to time. One thing can be said, however, and that is that no matter in what part of the state they were kept, they usually thrived and could be kept at a profit. In many cases people were compelled, or at least they supposed they were compelled, to quit the sheep business on account of the "Miner's Dog." In other cases the flocks were disposed of because the land could be sold for a high price as coal land, and that meant a change of ownership and an abandoned flock and farm.

On the other hand, the sheep breeder was compelled to compete with the sheepmen on the Western range, both in mutton and wool production. The men on the range had the advantage of cheap land and facilities for handling large flocks at a very low cost. Such condition of affairs is rapidly changing, however, as much of the Western land is being taken up by the settler, which cuts into the free range which the sheepmen have enjoyed and increases the cost of handling and maintaining their flocks. This naturally means that many of the large sheep ranches will be abandoned, and the task of producing the wool and mutton for the American people will fall to the lots of the farmers in East and Middle West.

Pennsylvania farmers have many advantages over the farmers in the West when it comes to the question of supporting and maintaining a farm flock of sheep. There are thousands of acres of land in this state that are admirably adapted to grazing and should be used for that purpose. Many of the hillsides that are now under cultivation would bring better returns and be less expensive to operate if they were used to pasture sheep or cattle. The farmers of this state have excellent markets for both mutton and wool, which gives them a decided advantage.

One of the questions that naturally arises at this time is, "What will the next Congress do with the tariff, and what effect will it have on the sheep industry?" One thing seems certain, and that is that no radical or sweeping changes will be made. No matter what Congress does with the tariff, it seems that there never was a more appropriate time to go into the sheep business than at present.

There are many reasons why no farmer in the State of Pennsylvania should be without at least a small flock of sheep. There is no other animal on the farm that grows into money quicker than a lamb, and it does it almost without expense to the owner. A flock of sheep is one of the few classes of live stock that develops two crops per year, namely, the wool crop in the spring and the lamb crop in the fall. Many farms in the state are badly infested with weeds, especially in vacant lots and in fence corners. A flock of sheep is one of the best means of keeping down these weeds at no cost of labor to the owner. Fresh meat of one kind or another is relished by all during the summer months. On a farm where a flock of sheep is kept, a lamb or sheep of one kind or another can be dressed to supply this desired change of diet at a small expense.

A farmer who has had no experience with sheep should not attempt to go into the business on a large scale. The successful handling of sheep can only be learned thru experience, and this can be much better gained with a few sheep than with a large number. The farmer who starts with a dozen or fifteen ewes and one ram will stay in the sheep business longer, make more money, and be more successful in the end than the man who starts with one hundred ewes and a couple of rams.

The breed which the beginner selects does not matter. If he has a personal choice for any one breed, that is the one for him to select. Otherwise, any one of the common breeds will do good service. In choosing a breed of any kind, there are several things to keep in mind, as they may have some influence on the decision made. Choose a breed that is not entirely foreign to the community, as it is sometimes difficult and expensive to get additional breeding stock. On the other hand, it may be difficult to dispose of some of the surplus stock is purebreds are kept and there is only one breeder of its kind in that community.

There are several methods that may be followed in establishing a breeding flock. The first is to select some good young grade ewes that are in good, healthy condition, and as good a ram as can be purchased. This would be a strictly commercial flock to be used for the production of mutton and wool. The other method of starting would be to buy some purebred ewes and a purebred ram, and breed to sell purebred breeding stock besides producing mutton and wool. The purchasing of high-grade ewes would be the cheapest and the most desirable for most farmers. By using a good purebred ram that is a good individual, it would not take many years to build up and improve the flock to a high standard of perfection.

The ram as an individual should be a good specimen of the breed which he represents, true to type and of good size. He should have a strong forehead, with plenty of width between the eyes. Strong masculine character, with a short, thick neck, a wide, deep chest, with smooth and level shoulders. The back and loin should be broad and strong and well muscled, with a good spring of rib. The leg of mutton should be well developed and carried down to the hock. The fleece should be dense, with good staple and not open and coarse. The skin should be pink, which is usually a good indication of condition. The reason that so much emphasis is put upon the ram is because all the ewes in the flock will be bred to him, and also because as a purebred, he will have a greater tendency to transmit his developed characters in the offspring, and they will be more pronounced than those of the ewes.

A flock of sheep selected on this basis, and provided with the proper care and management, can not help but result in doing some good by increasing the returns from the farm, as well as affording a great deal of pleasure and satisfaction to their owner.

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The Lawrence Publishing Co., Proprietors
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In some instances there have been unscrupulous persons who have used deceptive methods to sell stock, or other products, but you would not condemn those who are honest just because a few others have proven unreliable.

The advertisements in Pennsylvania Farmer are absolutely reliable, to the best of our knowledge. We will not accept any that are not. Every reader owes it to his own interest to read the advertisements as carefully as he does the reading columns; there is news there for you. Progress on the farm is possible only thru new methods, and our advertisers are working in the interests of farm progress. They are spreading good news. Read the advertisements and you will be the gainer.

PARCELS POST

The new parcels post service started off with a rush on January 1, and has continued at a rush ever since. No innovation in Federal service has ever proved so popular with all classes of people, except the express companies, as the result of this long deferred law. The city press is a unit in commending it, and city people are enthusiastic over the possibilities which such service affords. Yet farmers' organizations and leaders have been persistently advocating this law for more than 20 years. They have been the one great force to carry the fight against the express companies and bring about a service which was old in most of the foreign countries when it was first suggested here. The law is a victory for the farmers of the country, but it is a victory still to be completed. The present rates are very much too high. They are entirely out of proportion to the rates enjoyed in foreign countries, and on certain articles and for certain distances they are so high as to give the express companies an unfair advantage in the carrying business. It must be remembered that the present rates are merely experimental. They will be adjusted and lowered as the service increases and the department becomes adapted to the work. Farmers should help increase the bulk of service as much as possible, and should help demonstrate the need for further improvement and further extension. The start has been made, and there is little possibility of parcels post ever being dropped in this country. It will improve as the demand for improvement is made. With improvement will come real postal express, and then postal telegraph and postal telephone service. There is plenty of room ahead, so continue to boost.

THE GOOD CITIZEN

Opinions may differ as to just what constitutes a good citizen. To the thoughtful man the development of citizenship is as much a duty as the development of moral, mental and social character. Citizenship implies certain privileges under the government, but in a broader sense it implies duty to government. As "obedience to law is liberty," so fulfillment of duty to the state and nation is the highest form of civic privilege. On the first page of this issue we are presenting an article which should be of vital interest to every farmer, as it presents a brief study of one of the most important duties of citizenship. We hear and read much in these days of so-called corrupt politics, arrogant political machines and domineering political bosses. We criticise the system which permits the existence of these enemies of good government, and we chafe under legislation enacted by these misrepresentatives of the people. But we fail to recognize that back of every boss and every machine and every corrupt political party is an ignorant or indifferent majority made up of the people themselves. It is a fundamental principle under our form of government that the laws of our state or nation and the administration of these laws are just what we, the voters, make them. If corrupt laws are passed, or if a leader assumes the powers of a boss, the remedy lies with the same forces which gave him the power—the voters. The public official or the political manipulator is just as powerful as his constituents made him or permitted him to be, and no stronger. No single individual has ever yet become so powerful a factor in government functions that he could long controvert the will of the people, unless he was backed up by an ignorant or indifferent constituency. This places the responsibility for good government, as well as good public officials upon the people; upon you and me. The ills that have arisen in our political affairs have come as a result of our indifference to civic duty. We have permitted others to make our nominations and dictate our elections. We have voted for the men thus nominated, and have regarded our duty as fulfilled, and the men thus elected have done the rest. If we are not satisfied, we ourselves are to blame. Happily a new and more hopeful condition is developing. There has been an awakening to the fact that representative government requires more representative thought and more representative action. A hopeful majority has demanded that they make nominations as well as elections, and they are now demanding that the men thus elected give account of their official acts. In short, they are demanding real representation, in which the public shall be a vital part of the governing body after as well as before and during the election. The article on the first page shows how the public may do this, and points out specific duties which every voter should take to himself. There are a large number of measures of far-reaching importance to farmers to be considered in state legislatures now in session. There are questions upon which farmers are supposed to hold strong opinions. If your representatives are desirous of representing you, they will welcome your best thought and suggestion on these subjects. If not, you owe it to yourself and your community to help establish the quality of your representative and give him no excuse for failure to comply with your wants. Be a part of the governing body by doing your duty as a citizen.

PRICE-SMASHING CRUSADES

Price-smashing crusades have become a favorite pastime with some of the Housekeepers' Leagues of our larger cities. The purpose of these crusades is a worthy one and deserving of very much more careful study and systematic effort than has yet been put into it. The lowering of the cost of living by the elimination of the unnecessary middlemen calls for co-operation between the producers and consumers. But this co-operation must be based upon sound, practical business principles and must be developed gradually and persistently. The spasmodic outbreaks characterized as crusades lead to nothing in the way of permanent benefit, and do more harm than good. Such a crusade was recently launched in several eastern cities against the egg market. The ladies, with the best of intentions, and apparently in the search for a diversion to break the monotony of social duties, turned public benefactors for a week or two and engineered a price-smashing attack on the egg market. They succeeded in lowering the price of storage eggs, in some cases from 35 cents to 22 cents per dozen. They made no effort to sell fresh eggs, and that market was not interfered with. Fresh eggs moved higher in price and a large quantity of storage stock was unloaded, possibly at a lower rate than they would have been sold for under normal conditions, but not at a sacrifice. The crusade lasted only until the ladies tired of the diversion, and was then dropped. Egg prices immediately moved upward again, and it is safe to assume that the public will pay for any actual losses and all of the inconvenience which the storage men may have suffered during the hilarious but short-lived crusade. The effort was lost, so far as actual and permanent good is concerned, because the attack was without definite plans, and because it was promoted more as a fad than a serious effort at constructive marketing. There is more danger than benefit in such efforts. In the first place, the public secures no real benefit. In the second place, someone has to suffer because of the momentary unsettling of the market and the derangement of the natural flow of supply and demand; and the sufferers are usually the producers, who are as much at the mercy of the manipulators as the consumer. But more than this, these so-called crusades are promoted by people who do not take the trouble to inform themselves upon the actual conditions of the problems, and they fall of their own weight. It is now reported that the next attack is to be directed against the present oleo law, in the effort to break butter prices and destroy the butter trust. A prominent leader in the League which is to undertake this work is quoted as saying that the $100 license demanded of retailers of oleomargarine in Pennsylvania is responsible for an 8 to 10 cent increase in the cost of oleo, and thus places that commodity out of reach of the poorer people. She loses sight entirely of the color question and the question of the substitution of a bogus product for the genuine. She and her companions would be the first to insist on pure food law enforcement and the prevention of the use of saccharine, glucose, benzoate of soda, and the many other common food substitutes and adulterants. Yet in their misguided zeal in solving the much advertised cost-of-living problem, they would destroy a law which prevents just such substitution for butter.

STATE CAPITAL NEWS

Larger Stock Board.—At a recent session of the legislative committee of the Penna. Cattlemen's Ass'n a bill was drawn providing for a more representative State Live Stock Sanitary Board. This board, which was created about 17 years ago, is composed of state officials only, all heads of other departments and busy men. The cattlemen ask that the board be increased to eight, and stipulate representation for the dairying, farming, slaughtering and shipping interests of the state.

Greatest Income From Fertilizers.—The aggregate of the state income from licensing of fertilizers in the year just closed amounts to close of $30,000, the greatest ever obtained from that source. The percentage of adulterants is being reduced year by year.

Would Return Tax on Bonds.—The Pennsylvania Conservation Association will present a bill to return to districts which have bonds for local, school, road, municipal and other purposes the amounts of tax paid by them to the state. All of this tax, which amounts to thousands of dollars a year, is now retained by the state. It is a considerable drain on the districts and it is figured could be saved. For years the state retained all of the personal property tax, but now three-fourths is returned to the counties.

Extension of Orchard Work.—State Zoologist H. A. Surface is making up estimates for appropriations to the next legislature, and will ask for $150,000 to $160,000 for extension of the inspection work in the state's orchards. The allowance for the two years commencing June, 1911, was $80,000. The work has more than doubled, and as the returns to the fruit growers of the state amount to many thousands of dollars a year as the result of the scientific methods introduced, Dr. Surface says that it is due to the farmers.

Condemned Stock.—The proposed scale of prices for live stock killed by orders of state authorities because of disease is given by State Cattlemen's legislative committee as follows: Bovine of grade or common stock, horse or mule, $60; registered bovine, $100; hog, $20; and sheep, $10. Any animal killed by orders of a state officer and found to be in a healthy condition shall be paid for in full. Steps to expedite settlements for cattle killed will also be taken.

Agricultural Education.—Prof. L. H. Dennis, agricultural expert of the State Department of Public Instruction, is working out a plan for advancing such education. The number of schools taking advantage of the state assistance for such courses is increasing, and it is believed that by aid to poor districts it can be made of considerable value.

Approve Forestry Plan.—The State Department of Forestry and State Conservation Association have agreed upon a plan to push legislation. It will include a system of auxiliary forest reserves which will include all woodland, whether on farms or lumber tracts, which owners may care to put under state control during growth. The idea is to permit low taxation and to encourage reforestation. The State Department of Forestry will ask for $200,000 for extension of reserves.

State's Free Library Work.—State Librarian Montgomery reports that 329 places have been established where people can have the advantage of the free library system of the state, and extension to rural districts is being worked out. If an extra appropriation for books, which has been requested, next

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saved hardly reconciles one to the difference in results. If the stranded cotton is used it must not be separated, the entire strand being threaded into the needle.

Begin working the roses by placing a solid round center of light green floss. The usual outline stitch is then utilized to place the rose shades round and round this center, heaping the stitches up to secure the button effect until scarcely a bit of center shows. This is where practice alone insures success. The roses must be made quite high, and round off at the edges. Several shades are used in each rose, the darker ones alone in some instances, lighter in others, and then a mixture of light and dark, so that scarcely two roses are alike. As a rule, the darkest shades used in any given rose should be placed nearest the center, but this is not obligatory.

The first outline stitches must be taken almost on top of each other to throw the center up well. A completed rose, with its foliage, also appears. The leaves in this style of embroidery are not made as they are in most forms of embroidery. The individual leaves are made of one bird's-eye stitch, as in lazy-dazy work. The needle is brought up at the base of the leaf, and a stitch taken from that point to the tip, the thread being thrown under the point of the needle; a tiny stitch is then made at the tip to hold the oval in shape. All the stems are outlined, with occasional outbranching stitches to stimulate them. The work is speedy when the shaping of the roses is once understood, and is extremely fascinating. Making use of as many needles as one has shades of colors of floss is a great saving in time in any work where so many changes are required, four or five shades entering into most of the roses and two or three shades of green being utilized for foliage.

Hints to Housekeepers

Collar Buttons.—Try sewing a button on the back of a shirtwaist neckband to button the collar to. You will find it much more comfortable, as it does not press into the neck as collar buttons do.

Openwork Yoke.—When you wish to make a pretty openwork yoke for the baby's dress, try this plan: Draw threads the length of the yoke until the space is one fourth inch wide; miss one half inch or more if desired. Make another open space, and continue across the yoke. Loosen the tension of your sewing machine slightly and stitch down the center of each open space and you will have a pretty yoke with very little outlay of time.

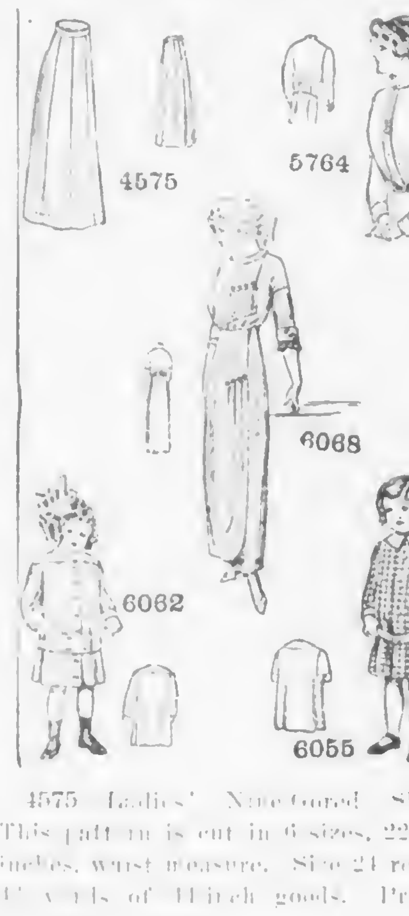
Yarn Receptacle.—A small gold fish globe is the very best receptacle for holding knitting yarn or crochet cotton, which is always rolling about on the floor. The ball or spool stays in the globe much better than in a box, and the globe is not so easily upset. One only has to be a little careful that it is not broken.

Boys' Neckties.—To the mother of school boys, I would say that a supply of pretty neckties for school wear may be made from the contents of the scrap bag. Use only cotton goods that will wash. For the Oxfords, cut gingham on the bias, five inches wide and the required length. For the four-in-hand, use gingham or pique, cut after the pattern of an old one. Both these kinds hem with the smallest hemmer on the machine. For the straight ties, cut the goods nearly a yard long and two inches wide. Hem the ends, fold and sew lengthwise; turn and press. You always have a clean tie for the boys to wear to school which looks much better than a soiled silk one.

Renovating Ribbon Bows.—When the ribbon bows on your hat become soiled or mussed, heat the bowl of a large kitchen spoon, using it as you would a flatiron and press the loops out from the inside. A little care and patience will do away with the necessity of removing and pressing the lengths, after which the bows must again be formed. For small loops of narrow ribbon, a curling iron may be used in the same manner.

PENNSYLVANIA FARMER PATTERNS

Be sure to give the figures and letters of each pattern exactly as printed at the beginning of each description. We will not be responsible for correct filling of your orders unless you do so. Also give bust measure when ordering waist patterns, waist measure for skirt and age for children's patterns. Address Pennsylvania Farmer, 214-18 So. 12th St., Philadelphia, Pa.



4575—Ladies' Nine-Gored Skirt.—This pattern is cut in 6 sizes, 22 to 32 inches, waist measure. Size 24 requires 4[illegible] yards of 44-inch goods. Price of pattern, 10 cents.

6068—Misses' and Small Women's Dress.—This pattern is cut in sizes 14, 16 and 18 years. Age 16 requires 5¼ yards of 36-inch material; ⅜ yard of lace edging and 1¼ yards of ruffling. Price of pattern, 10 cents.

5764—Ladies' Tailored Shirt Waist, with Plain or Gathered Sleeves.—This pattern is cut in 6 sizes, 32 to 42 inches, bust measure. Size 38 requires 3¼ yards of 27-inch goods. Price of pattern, 10 cents.

6062—Children's Dress.—This pattern is cut in 4 sizes, 2 to 8 years. Age 8 requires 2⅞ yards of 36-inch material, [illegible] of a yard of 27-inch contrasting goods. Price of pattern, 10 cents.

6055—Boys' Dress.—This pattern is cut in 3 sizes, 1, 2 and 3 years. Age 3 requires 1⅝ yards of 36-inch material; [illegible] of a yard of 27-inch contrasting material. Price of pattern, 10 cents.

Farm Gas Engines.—By H. R. Brate. Cloth bound; 198 pages; 5 x 7 inches. Illustrated. Published by the Gas Engine Publishing Co., Cincinnati, Ohio. Price, $1.00.

This is the first book ever published specially for the farmer on gas and gasoline engines. The author is an experienced farmer, and has spent years in the study and operation of engines. The discussion covers fuels, carburetion, compression, ignition, magnetos, batteries, oils, lubrication, cooling, operation, farm pumping plants, lighting plants, troubles and how to locate them, etc. It is just the book for the farm power user.

Farmer Lovcajoke — "Ha! ha! Here's a good one! A man was asked what a phenomenon was, and he said, 'Well, suppose you go down the road and see a cow. That's no phenomenon. You go a little further and see a bird. *That's* no phenomenon. But if you go a little further and see a cow sitting on a thorn-bush singing like a bird, *that's a phenomenon.*'"

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PENNSYLVANIA FARMER, PHILADELPHIA, PA

IRREGULAR PAGINATION

Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., Jan. 6, 1913.

The butter market rules steady on best grades. Much of the supply is of medium quality. Good prints are well cleaned up. Cheese is steady under quiet trade. Egg receipts are liberal, but the good demand keeps prices steady. Poorer grades move slowly. There is a scarcity of good live poultry at good prices. Dressed poultry remains firm. Potatoes, onions and cabbage are plentiful and prices lower. Other commodities as quoted.

Butter.—Western creamery, 39c; extras, 37½@38c; firsts to seconds, 29@34c; special prints, 43@46c; near-by prints, 38@40c.

Cheese.—New York full cream, 18@18¼c; skims, 11@15c, according to quality.

Eggs.—Candled, 33@36c doz.; extras, 30c. Current receipts at $7.80@8.10 per standard case.

Poultry.—Fowls, 14@16c; old roosters, 11@11½c; spring chickens, 14@16c; ducks, 15@16c; pigeons, 18@25c pair; turkeys, 18@19c.

Dressed Poultry.—Western fowls, 15½@16c; roosters, 12c; chickens, 16@18c; turkeys, 20@23c.

Vegetables.—White potatoes, choice, 70@73c bu. Onions, 30@40c bu. Cabbage, $8@9 ton. Lettuce, $1.25@1.75 basket. Cucumbers, $2.75@3.50 basket. Celery, 25@50c bch. Spinach, 75c@$1.00 bbl. Kale, 50@60c bbl. Egg plant, $1.75@2.50 box.

Fruit.—Apples, choice varieties, 25@75c hamper, $2.00@3.50 bbl. Cranberries, $5.00@9.00 bbl.; $1.75@2.75 crate.

Hay and Grain.—No. 1 timothy, new, $19.00@19.50; No. 2, $16.50@17.50; No. 3 do., $14.50@15.50. No grade, $10.00@12.00. Clover, mixed, No. 1, $16.00@16.50; No. 2 do., $14.00@15.00. No. 1 tangled rye straw, $12.50@13.00; No. 1 oats straw, $10.50@11.00. New shelled corn, as to quality, 56@58c; new cob, 53@54c per 70 lbs. No. 2 red wheat, 97½@98c; No. 3 do., 92½@93c. No. 2 white oats, 40@40½c. Standard white, 39@39½c; No. 3 white, 38@38½c.

Hides and Skins.—Steers, abattoir, 17½@18c; do. country, 14@14½c. Cows, abattoir, 14½c; do. country, 13c. Bulls, abattoir, 13c; do. country, 11c. Calf skins, Nos. 5 to 12 and up, $1.35@2.55; do. green, 13@14c. lb.

Seeds.—Timothy, $3.15@3.25 bu.; clover, white, $25; do. crimson, $6.25; do. mammoth, $14.50; do. sweet, $13.00; do, alsike, $13.25; red top, per bu., $13.50; alfalfa, $7.00@10.00; Canada field peas, $2.35; vetch, $8.50; rye, winter, $1.35; spring, $2.25; soy beans, $3.25; barley, $2.50; buckwheat, $1.50; cowpeas, $3.00@3.25; millet, $1.90@2.75; oats, $1.20; wheat, $1.70@2.00.

Coffee.—Rio, 7s, 13¾c; Santos, 4s, 15¾c. Mild Coffee—Cordova, 16¾@18c.

Provisions.—City beef, smoked and air-dried, 21@22c. Beef hams, 29@31c. Pork, family, $21.00@22.00. Hams, cured, 13¾@14½c; skinned, 12@12¾c; smoked, 14@16c. Other hams, smoked, city cured as to brand, 15@16c. Picnic hams, 11¼@11½c; do, smoked, 13@13½c. Bellies in pickle, 13½@14c. Breakfast bacon, as to quality, 16@20c. Lard, refined, 11¼@11½c; do. in tubs, 11¼@11⅞c; do. kettle rendered, 11@11½c. Tallow, prime city, 6¾c; do. country, 6¾c; do. dark, 5¾c; do. cakes, 7c.

Sugar.—Cut loaf, $5.70 cwt.; cubes, $5.15; powdered, $5.00; granulated $4.90; standard granulated, $4.95; crystal A, $4.90.

Flour.—For 196 lbs., in wood, winter clear, new, $4.10@4.25; do. straight, new, $4.40@4.65; favorite brands, $4.75@5.25. Rye flour, Penna., $3.60@3.75.

NEW YORK PRODUCE

New York City, Jan. 6, 1913.

The butter market is weak and further decline is looked for. Quality is improving. Cheese is quiet but prices steady. Eggs have become scarcer under reports of cold weather from the northwest. There is fair trading in best grades. Dressed poultry receipts are largely of unattractive stock. Prices are about steady. Live poultry receipts are heavy, but demand is active and the market firmer. Potato offerings are liberal and market dull and weak. Onions are in excessive supply and dull. Cabbages dull and low. Other commodities as quoted.

Butter.—Creamery firsts to extras, 32@37c; thirds to seconds, 27@31c; factory, 21@24½c; state dairy, 23@34c; packing stock, 18@22c; process, 22½@27c.

Cheese.—Whole milk special, 18c; do., common to fancy, 16@17¾c; skims, 8@14¾c.

Eggs.—State and near-by, 35@36c; fresh gathered, 27@29c; mixed, 25@27c; refrigerator, 12@19½c.

Dressed Poultry.—Turkeys, dry, 19@23c; chickens, Penna., 14½@23c; fowls, 12@14½c; old roosters, 11½c; ducks, 17@20c; roasters, 17@18c.

Live Poultry.—Fowls, 12½@14c; chickens, 12½@13c; roosters, 10c; ducks, 14@15c; geese, 14c.

Grain.—Steady. Wheat, No. 2 red, $1.06½; No. 1 Northern, 99¾c. Corn, 55¾c. Oats, standard white, 39@39½c.

Vegetables.—Potatoes, state, $1.75@2.00 per 165-lb. bag. Cabbage, $3@4 ton; do. Danish, $6.00@9.00 ton. Green beans, $1.00@2.75 basket. Carrots, 50c@$1.00 bag. Cucumbers, $2.50@3.00 basket. Lettuce, 50c@$1.50 basket. Squash, 75c@$1.25 bbl. Celery, $1.00@3.00 case. Horseradish, $3.00@5.00 cwt. Parsnips, 75c@$1.12 bbl. Turnips, 35@75c bbl.

Fruit.—Apples, $1.75@4.00 bbl., according to variety. Pears, $2.00@4.00 bbl. Cranberries, $7.00@9.50 bbl.

Nuts.—Hickory, $1.00@1.50 bu. Black walnuts, 25@50c bu. Butternuts, $1.00.

BALTIMORE PRODUCE

Baltimore, Md., Jan 6, 1913.

The butter receipts for the week were about normal and prices remained unchanged. Under advices of lighter supplies, eggs were in greater demand and were a shade firmer. The inquiry for poultry was quiet and prices were without much change. There was good trading in fruits and vegetables at some revised figures.

Butter.—Creamery, fancy, 36c; do., choice, 34@35c; prints and blocks, 34@37c. Maryland and Penna. rolls, 22@24c; prints, 21@21½c. Process, 26@28½c.

Cheese.—Flat, 17½c; Daisy, 18@18½c.

Eggs.—Md. and Penna., firsts, 27c; western, 27c; southern, 24@25c.

Live Poultry.—Hens, 15c; chickens, 16c; old roosters, 10c. Turkeys, 20@21c. Ducks, 15@16c. Geese, 14@16c. Guinea fowls, 30@45c each.

Dressed Poultry.—Turkeys, 21@22c; chickens, 16@17c; roosters, 10@11c; ducks, 16@18c; geese, 16@18c.

Vegetables.—Potatoes, white, 60@65c bu. Sweets, $2.50@3.00 bbl. Cabbage, $4.00@5.00 per ton; Danish, $5.00@6.00. Onions, 40@50c bu. Lettuce, $1.75@2.00 basket. Egg plant, $1.50@2.00 crate. Peppers, $1.00@1.50 crate. Squash, 10@15c basket. Spinach, 30@35c box. Cucumbers, $3.00@3.50 basket. Beans, green, $1.50@2.25 basket. Celery, $1.75@3.00 crate. Turnips, 17½@20c box. Cauliflower, $2.50@2.75 bbl. Horseradish, $1.75@2.00 box.

Fruit.—Apples, new, $2.00@3.50 bbl., 50c@$1.00 bu. Cranberries, $8.00@9.00 bbl.

Grain.—Wheat.—No. 2 red western, $1.06; contract, $1.05½. Corn, new, 53¾c; contract, 53c. Oats, No. 2 white, 39¾@40c; standard white, 38¾@39c; No. 3 white, 37¾@38c. Rye, 56@65c.

Hay and Straw.—No. 1 timothy, $18.50@19.00. No. 2 timothy, $16.50@17.00. No. 3 do., $11.00@16.00. Choice mixed, $15.00@15.50. No. 1 clover, $13.00@13.50. No. 2 do., $10.00@12.00. No. 1 tangled rye straw, $12.50@13.00. No. 1 oat straw, $9.00@10.00. No. 1 wheat straw, $8.00.

Millfeed.—Spring bran, $24.00@24.50. Middlings, flour to white, $27.00@29.00; western middlings, $24.00@24.50; city mills mids., $24.00@24.50.

YORK PRODUCE MARKET

York, Pa., Jan. 6, 1913.

The markets were well attended all last week, but the demand has not been up to normal. Butter is off. Eggs are firm under an increasing supply. Celery storages are about empty and the price is advancing.

Butter.—Country, 32@34c; separator, 33@36c. Milk, 6c per qt.

Eggs.—30@32c per doz.

Poultry.—Hens, 12c. Dressed poultry, 40@75c each.

Vegetables.—Potatoes, 10c half peck; 55@60c bu.; cabbage, 2@4c each; lettuce, 5@10c; beets, 3@5c bunch, 10c per ½ pk.; radishes, 2@5c; turnips, 8@10c per ½ pk.; onions, 10c per ½ pk; peppers, 10c doz.; Lima beans, 12@15c qt.; soup beans, 10c qt.; celery, 3@10c stalk; sweet potatoes, 10c per ½ peck; spinach, 10c per ½ pk.; parsnips, 10c per ½ pk.; sauer kraut, 6@8c qt.; lard, 14@16c lb.; corn meal, 5@6c qt.

Fruit.—Apples, 8@24c a half peck; grapes, 10@15c basket; pears, 10@15c per ½ pk.; chestnuts, 15@25c qt.; walnuts, 12c per ½ pk.

Retail Grain Market.—Wheat, $1.08; corn, 65c; oats, 50c; bran, $1.30 a cwt.; rye, 78c; middlings, $1.55 a cwt.

WILMINGTON PRODUCE

Wilmington, Del., Jan. 6, 1913.

The markets have been seasonably active, but a little cold weather would stimulate buying. Prices are generally steady. Eggs are lower under more liberal receipts. Butter is steady.

Fruits.—Apples, 28@60c pk.; $2.50@4.00 bbl. Grapes, $4.00@6.50 keg.

Vegetables.—Potatoes, 80c bu.; 30c pk. Cabbage, 75c@$1.00 bbl.; $4.00@5.00 per 100; 4c each. Onions, 20c ½ pk. Celery, 25@50c doz.; 5@15c bch. Spinach, $1.50 bbl. Sweet potatoes, 75@80c basket.; $3@3.50 bbl. Kale, $1.25 bbl. Carrots, 10c ½ pk. Lettuce, 5@8c head.

Poultry.—Chickens, live, 13@15c; do., dressed, 16@17c. Ducks, 14c lb.; dressed, 17c.

Eggs.—30@34c; storage, 24@25c.

Butter.—Creamery, 30@35c; prints, 38@45c.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., Jan. 6, 1913.

There is a moderate but sufficient supply of cattle, mostly of Ohio and Kentucky brands. Trading is only fairly active and prices are steady. Best cows and calves are firm in price.

	Beef Cattle	Sheep and Lambs	Hogs
Total for week	3,932	12,154	4,306
Previous week	4,529	12,608	4,609

Best steers	$8.75@9.00
Choice steers	8.25@8.50
Good	7.75@8.00
Medium steers	7.00@7.25
Common steers	6.50@6.75
Bulls	4.50@6.50
Fat cows	5.50@6.50
Thin cows	2.75@3.25
Milk cows	40.00@75.00

Veal calves are firm.

Best calves	$11.00@12.00
Good to choice do.	10.00@10.50
Medium	7.50@8.00
Common do	6.50@6.75
Thin do.	5.00@8.00

Lambs are held steady; while sheep, which are not plentiful, are a little higher. An increase of receipts will force prices down.

Extra wethers	$5.25@5.50
Choice wethers	5.00@5.25
Good wethers	4.50@5.00
Common to medium	3.00@4.25
Ewes, fat	4.50@5.00
Extra lambs	9.00@9.25
Good to choice do.	8.75@9.00
Common to medium	5.75@8.25

Hogs are about steady, westerns selling at $10.50@10.75.

City Dressed Stock.—Choice classes of dressed meat are a shade higher. Trade is normal. Steers, 10@13½c; heifers, 9@12c; cows, 7½@10½c. Veal calves, 14@17c; country dressed calves, 13@14½c; extra do., 15c. Sheep, 8@9c; extra wethers, 10c. Spring lambs, 13@15c. Hogs, 10¾@11c.

NEW YORK LIVE STOCK

New York City, Jan. 6, 1913.

Cattle receipts were 3,940 head. The market is weak. Bulls and cows are steady.

Steers	$4.75@8.60
Bulls	4.75@6.40
Cows	3.15@6.10

Dressed beef steady at $10.00@13.20 for native sides.

Calf receipts were 2,172 head. The market is active and lower.

Choice veals	$12.00@12.50
Good veals	8.50@11.50
Culls	6.00@8.00
Barnyard calves	4.50@5.75
Fed calves	5.75@6.50
Westerns	4.00@5.25

Dressed calves are strong.

City-dressed veals	14@18c
Country-dressed veals	9½@16c

Sheep and lamb receipts were 11,538. Sheep are steady and lambs higher.

Sheep	$3.50@4.75
Culls	2.75@3.25
Lambs	8.00@9.50
Culls	5.50@6.50
Yearlings	5.50@8.25

Hog receipts were 14,513 head. The market is higher.

Light to heavy	$8.00@8.25
Pigs	7.90@8.00
Roughs	6.75@7.00

PITTSBURGH LIVE STOCK

Pittsburgh, Pa., Jan. 6, 1913.

Today's cattle receipts were 100 loads. The demand was quiet and the market ruled steady.

Good to choice	$8.75@9.00
Good, 1300 to 1400 lb.	8.20@8.65
Medium to good, 1200-1300 lb.	7.50@8.75
Tidy, 1050-1150 lb.	7.40@8.00
Fair to medium, 900-1100 lb.	6.50@7.10
Common, 700 to 900 lbs.	4.25@5.75
Common to good fat oxen	4.00@6.00
Common to good fat bulls	3.50@6.75
Common to good fat cows	3.75@6.25
Heifers, 700 to 1000 lbs.	4.25@7.50
Bologna cows	3.35@3.65
Fresh cows and springers	25.00@90.00

Calves.—Receipts were 400 head. The market is steady.

Heavy and thin calves	$5.00@7.00
Veal calves	9.00@11.50

Hogs.—Today's hog receipts were 80 double-deck loads. The market was rather dull and lower.

Prime heavy	$7.50@7.60
Prime medium weights	7.50@7.60
Heavy mixed	7.50@7.55
Best heavy Yorkers	7.85@7.90
Light Yorkers	7.95@8.00
Pigs as to quality	7.95@8.00
Common to good roughs	6.50@7.00
Stags	5.75@6.25

The supply of sheep and lambs today was 33 double-deck loads. With a good demand the market ruled active and strong.

Prime wethers	$5.30@5.50
Good mixed	4.00@4.50
Fair mixed ewes and wethers	3.50@4.00
Culls and commons	2.50@3.00
Spring lambs	6.00@9.00
Good mixed	4.00@4.20

BALTIMORE LIVE STOCK

Baltimore, Md., Jan 6, 1913.

Cattle receipts for the week were 2,990 head, as compared with 1,936 head last week. The market is 25c lower.

Steers	$5.00@8.50
Heifers	4.25@7.00
Cows	2.15@5.70
Bulls	3.25@5.50
Fresh cows	$25.00@80.00

Sheep and lamb receipts for the week were 3,464 head, compared with 3,133 head last week. Under light supply, the market is firmer.

Sheep	$2.50@5.00
Lambs	6.00@9.25

Hog receipts for the week were 14,385 head, against 12,165 head last week. The market is firm under a fair supply.

Light westerns	$8.20@8.30
Heavy to medium	8.00@8.10
Near-by	7.80@7.95
Pigs	7.25@8.00
Roughs	6.00@7.50

Calf receipts this week were 483 head, against 197 head a week ago. The market is firm under fair supply, at 6@11½c lb.

BUFFALO LIVE STOCK

Buffalo, N. Y., Jan. 6, 1913.

Cattle receipts today were 2,500 head. Trading was active, and the market strong at higher prices.

Choice heavy steers	$9.00@9.25
Medium	8.00@8.50
Yearlings	8.00@9.00
Plain heavy	7.50@7.75
Handy butchers	7.25@7.75
Good to choice fat cows	5.00@7.00
Good to choice heifers	7.50@8.75
Butcher bulls	4.00@6.75
Feeders	5.40@6.75
Stockers	4.50@6.00
Cows and springers	35.00@75.00

Calf receipts today were 900 head. The market was active and steady.

Choice veals	$11.50@12.00
Light and thin	6.00@8.50

There were 12,000 head of sheep and lambs on sale today. The market was active.

Choice lambs	$9.25@9.50
Poorer grades	6.00@6.50
Yearlings	7.00@8.00
Wethers	5.50@5.75
Ewes	4.50@5.25
Sheep	4.00@5.50

Today's hog receipts were 20,000 head. The market was active, and prices steady to firm.

Heavies	7.80@7.85
Mixed and medium	7.80@7.85
Yorkers	7.85@8.00
Light Yorkers	7.80@8.00
Pigs	8.00@8.15
Stags	5.25@6.25
Roughs	6.90@7.00

PITTSBURGH HAY AND GRAIN

Pittsburgh, Pa., Jan. 6, 1913.

Hay receipts have eased up a little, but the demand is also lax. It is difficult to dispose of arrivals of poor stock at satisfactory prices. The demand is slightly improved on No. 1 timothy. Receipts of straw are excessive. The market has an easier feeling. No. 1 timothy, $16.00@16.50; No. 2 do., $14.00@15.00; No. 3 do., $12.00@13.00; No. 1 light mixed, $15.00@15.50; No. 1 clover mixed, $15.00@15.50; No. 2 do., $13.00@14.00; No. 1 clover, $15.00@15.50; No. 2 do., $12.00@14.00. No. 3 prairie, $11.00@11.50; No. 4 do., $9.00@10.00. No. 1 oat straw, $10.00@10.25; No. 2 do., $9.75@10.00; No. 1 wheat, $10.00@$10.25; No. 2 do., $9.75@10.00; No. 1 rye, $11.00@11.50. No. 2 do., $9.50@10.00. Ear corn arrivals are about sufficient to meet the demand; market steady. No. 2 yellow, 54@55c. No. 2 high mixed, 53@54c. Shelled corn is quiet but firm; arrivals and demand about equal. No. 2 yellow shelled, 54½@55½c; No. 3 do., 53½@54½c; No. 3 natural, 51@51½c; sample, 49@50½c. Oats are in heavy receipt and slow demand. Market easier. No. 2 white, 37½@38c; standard, 37@37½c; No. 3 do., 35½@36c; No. 4 do., 34@35c. The demand for middlings is very slow, but bran has improved. Market fair. No. 2 white mids., $25.00@25.50; No. 1 brown mids., $22.50@23.00. Winter wheat bran, coarse, $23.00@23.50; do., medium, $22.50@23.00.

ELGIN BUTTER QUOTATION

Elgin, Ill., Jan. 6, 1913.

The quotation committee of the Elgin Board of Trade this afternoon declared butter firm at 34c a pound.

NEW YORK MILK QUOTATION

The wholesale milk price is $1.81 per 40-quart can for class C; class B, $1.91.

TOBACCO MARKET

Because of the holidays and the fact that the large concerns have left the field, apparently supplied, conditions were quiet and comparatively few sales made. The past year is not rated as a prosperous one in the Pennsylvania region, for with the exception of the past few weeks, values were slow and generally unsatisfactory. It is evident that growers and dealers have here, as elsewhere, been too much at the mercy of factories, which never fail to take full advantage of what is to them favorable conditions. One thing that curtailed the demand was the fact that the factories had large supplies of old tobacco, which they preferred to the somewhat inferior crop of 1911. The generally superior quality of the 1912 crop has been shown by the higher prices and active demand, and now that the holidays are over it is expected that buying will be resumed.

Much interest centers in the coming tobacco show, to be held at Lancaster on February 3d, and not January 13th, as previously announced. There will be exhibits from several counties, and it is expected that the show will be the best ever held in the section.

The Lancaster County Tobacco Growers' Association has been advised that funds will be provided for the continuation of the tobacco experiments which were begun in 1909. The government work in co-operation with the above organization has resulted in some very useful findings, and now that the work is to be continued and extended, the field of usefulness will be even larger than heretofore. During the present year extensive experiments in curing will be conducted. This work has been made possible thru the efforts of Congressman W. W. Griest. The same organization is opposing any reduction in tariff on foreign tobaccos, it being generally understood that such reduction will be attempted at the present session of Congress. Dealers and manufacturers handling and using imported Sumatra and Havana stock naturally favor the measure, while those who use the home product are in with the growers in fighting the reduction, which could but mean a reduction in the now none too high prices of home-grown cigar tobacco.—H. E. Tweed, January 6, 1913.

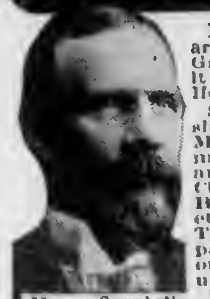
CATALOG NOTICES

Power Sprayers.—Spraying outfits are becoming as necessary to the orchardist and general fruit grower as the plow is to the general farmer. Spraying is essential to successful fruit growing. The general use of spraying machines, and the necessity for power pressure has brought about the perfection of high pressure power spraying outfits. These are so ably filling the needs of growers that their use is constantly growing. The latest and best improvements in such outfits are shown in a new catalog now issued by the Domestic Engine & Pump Co., Box 506, Shippensburg, Pa. A postal card request will bring a free copy.

Round Silos.—One of the best and most valuable booklets on silos and silage which has come to our hands recently is the new catalog of the Economy Silo Co., It not only describes and illustrates the famous Economy silos, but also gives valuable practical information on constructing stave silos, silage corn varieties, when and how to fill silos, feeding silage, cost of ensilage, etc. The catalog will be sent free upon request to the Economy Silo & Mfg. Co., Frederick, Md.

Phosphate Fertilizers.—The great German chemist, Liebig, conferred a blessing upon agriculture by his discovery of the method of making phosphorus available by the action of sulphuric acid upon phosphate rock. The practical benefits of this discovery have been further simplified by the perfection of the process reducing the phosphates to a fine powder that farmers can use and secure the same results at one-fourth the cost. How this is done is told in literature sent free upon request to the Central Phosphate Co., Mount Pleasant, Tenn.

Domestic Engines.—The domestic engine these days is the engine that will take the place of hired help in all the various farm jobs adaptable to engine power. The desirable qualities in such an engine are strength, durability, adaptability and workmanship. These qualities are combined in the engines manufactured by the Domestic Engine & Pump Co., Box 506, Shippensburg, Pa. A new catalog, describing these engines in all the popular sizes and powers, is now ready for distribution. A postal card request to the above address will bring it.



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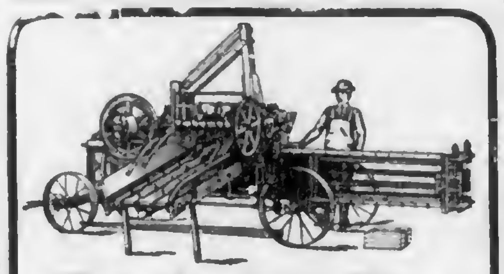
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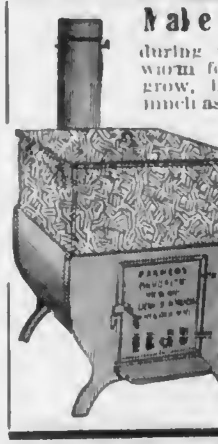
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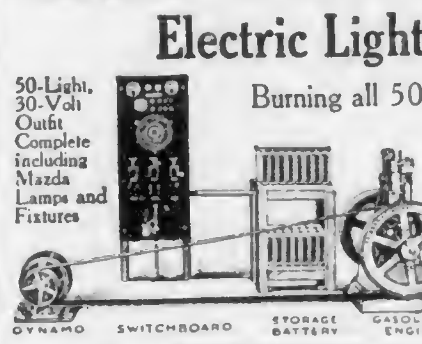
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BOOK II

WHAT HAPPENED AT NINE O'CLOCK

SYNOPSIS OF PRECEDING CHAPTERS

The scene of the story is laid in the home of Mrs. Varney, the wife of a Confederate general, in the city of Richmond. The city is being beseiged and is in danger of Union invasion. Edith Varney has fallen in love with Captain Thorne, who is accused by Arrelsford, a Confederate Secret Service man, of being a spy. Captain Thorne is under suspicion and is being watched. Wilfred Varney has just secured his father's consent to join the army. Arrelsford has planned to bring a Union prisoner to the Varney house to betray Thorne.

CHAPTER VII (Concluded)

The receipt of a letter from General Varney at this time meant but one thing.

Wilfred stepped closer to the elder woman, while Caroline slowly rose from her chair, her eyes fixed on Mrs. Varney.

“What does he say, mother?” asked Wilfred.

“He says——” answered his mother with measured quietness, and controlling herself with the greatest difficulty, “he tells me that—that you—are——” in spite of her tremendous effort, her voice failed her. “Read it yourself, my boy,” she whispered pitifully.

The letter was evidently brief. A moment put Wilfred in possession of its contents. His mother stood with head averted. Caroline stared with trembling lips, a pale face, and a heaving bosom. It was to the orderly that Wilfred addressed himself.

“I am to go back with you?”

“General's orders, sir,” answered the soldier, saluting, “to enter the service. God knows we need everybody now.”

“When do we start?” asked Wilfred eagerly, his face flushing as he realized that his fondest desire was now to be gratified.

“As soon as you are ready, sir. I am waiting.”

“I am ready now,” said Wilfred. He turned to his mother. “You won't mind, mother,” he said, his own lips trembling a little for the first time at sight of her grief.

Mrs. Varney shook her head. She stepped nearer to him, smoothed the hair back from his forehead, and stretched out her arms to him as if she fain would embrace him, but she controlled herself and handed him the cap and belt.

“Your brother,” she said slowly, “seems to be a little better. He wants you to take his cap and belt. I told him your father had sent for you, and I knew you would wish to go to the front at once.”

Wilfred took the belt from her trembling hands, and buckled it about him. His mother handed him the cap.

“Howard says he can get another belt when he wants it, and you are to have his blankets, too. I will go and get them.”

She turned and left the room. She was nearly at the end of her resisting power, and but for the welcome diversion incident to her departure, she could not have controlled herself longer. The last one! One taken, one trembling, and now Wilfred!

The boy entered into none of the emotions of his mother. He clapped the cap on his head and threw it back.

“Fits me just as if it were made for me,” he said, settling the cap firmly in place. “Orderly, I will be with you in a jiffy.”

Caroline stood still near the table, her eyes on the floor.

“We won't have to send it now, will we?” he pointed to the letter.

Caroline, with a long, deep sigh, shook her head, and slowly handed the letter to him. Wilfred took it mechanically, his eyes fixed on the girl, who had suddenly grown very white of face, trembly of lip, and teary of eyelashes.

“You are very good,” he said, tearing the letter into pieces, “to help me like you did.”

“It was nothing,” whispered the girl.

“You can help me again, if you want to.”

Caroline lifted her eyes to his face, and he saw within their depths that which encouraged him.

“I can fight twice as well, if——”

Poor little Caroline couldn't trust herself to speak. She nodded thru her tears.

“Good-bye,” said Wilfred, “you will write to me about helping me to fight twice as well, won't you. You know what I mean?”

Caroline nodded again.

“I wouldn't mind if you telegraphed me that you would.”

What might have happened further will never be determined, for at this juncture Mrs. Varney came back with an old faded blanket tied in a roll. She handed it to the boy without speaking. Wilfred threw it over his shoulder, and kissed his mother hurriedly.

“You won't mind much, will you, mother. I will soon be back. Orderly!” he cried.

“Sir.”

“I am ready,” said Wilfred.

He threw one long, meaning look at Caroline, and followed the soldier out of the door and across the hall. The opening and closing of an outside door was heard, and then all was still. Mrs. Varney held her hand to her heart, and long, shuddering breaths came from her. He might soon be back, but how. She knew all about the famous injunction of the Spartan woman, “With your shield or on it,” but somehow she had had no idea of the full significance until it came to her last boy, and for a moment she was forgetful of poor, little Caroline until she saw the girl wavering toward the door, and there was no disguise about the real tears in her eyes now.

“Are you going, dear?” asked Mrs. Varney, forcing herself to speak.

Caroline nodded her head as before.

“Oh, yes,” continued the older woman, “ your party, you have to be there.”

At that the girl found voice, and without looking back she murmured, “There won't be any party tonight.”

CHAPTER VIII

Edith Is Forced to Play the Game

Caroline's departure was again interrupted by the inopportune re-entrance from the back hall of Mr. Arrelsford, who was accompanied by two soldiers, whom he directed to remain by the door. As he advanced rapidly toward Mrs. Varney, Caroline stepped aside toward the rear window.

“Is he——” began Arrelsford, turning toward the window, and starting back in surprise as he observed Caroline for the first time.

“Yes, he is there,” answered the woman.

“Oh, Mrs. Varney,” cried Caroline, “there's a heap of soldiers out in your backyard here. You don't reckon anything's the matter, do you?”

The girl did not lower her voice, and was greatly surprised at the immediate order for silence which proceeded from Mr. Arrelsford, whose presence she acknowledged with a very cool, indifferent bow.

“No, there is nothing the matter, dear,” said Mrs. Varney. “Martha,” she said to the old servant who had come in response to her ring, “I want you to go home with Miss Mitford. You must not go alone, dear. Good-night.”

“Thank you very much, Mrs. Varney,” answered Caroline. “Come, Martha,” As she turned, she hesitated. “You don't reckon she could go somewhere else, do you?”

“Why, where else do you want to go at this hour, my dear girl?” asked Mrs. Varney.

“Just to to the telegraph office,” answered Caroline.

Mr. Arrelsford, who had been waiting with ill-concealed impatience during this dialogue, started violently.

“Now!” exclaimed Mrs. Varney in great surprise, not noticing the actions of her latest guest. “At this time of night?”

“Yes,” answered Caroline, “it is on very important business, and—I——”

“Oh,” returned Mrs. Varney, “if that is the case, Martha must go with you.”

“You know we haven't a single servant left at our house,” Caroline said in explanation of her request.

“I know,” said Mrs. Varney, “and, Martha, don't leave her for an instant.”

“No'm,” answered Martha, “Ah'll take ca' ob huh.”

As soon as she had left the room, passing between the two soldiers, Arrelsford took up the conversation. He spoke quickly and in a sharp voice. He was evidently greatly excited.

“What is she going to do at the telegraph office?” he asked.

“I have no idea,” answered the woman.

“Has she had any conversation with him?” said Arrelsford, pointing to the front of the house.

“They were talking together in this room early this evening before you came the first time, but it isn't possible she could——”

“Anything is possible,” snapped Arrelsford impatiently. He was evidently determined to suspect everybody, and leave no stone unturned to prevent the failure of his plans. “Corporal,” he cried, “have Eddinger follow that girl. He must get to the telegraph office as soon as she does, and don't let any despatch she tries to send get out before I see it. Let her give it in, but hold it. Make no mistake about that. Get an order from the department for you to bring it to me.” As the Corporal saluted and turned away to give the order, Arrelsford faced Mrs. Varney again. “Are they both out there?”

“Yes,” answered the woman. “Did you bring the man from Libby Prison?”

“I did, the guards have him out in the street on the other side of the house. When we get Thorne in here alone I'll have him brought over to that back window and shoved into the room.”

“And where shall I stay?”

“Out there,” said Arrelsford, “by the lower door, opening upon the back hall. You can get a good view of everything from there.”

“But if he sees me?”

“He won't see you if it is dark in the hall.” He turned to the Corporal who had re-entered and resumed his station. “Turn out those lights out there,” he said. “We can close those curtains, can't we?”

“Certainly,” said Mrs. Varney, opening the rear door and drawing the heavy portieres, but leaving space between them so that any one in the dark hall could see thru them but not be seen from the room.

“I don't want too much light in here, either,” said Arrelsford. As he spoke he blew out the candles in the two candelabra which had been placed on the different tables, and left the large, long room but dimly illuminated by the candles in the sconces on the walls.

Mrs. Varney watched him with fascinated awe. In spite of herself there still lingered a hope that Arrelsford might me mistaken. Thorne had enlisted her interest, and he might under other conditions have aroused her matronly affections, and she was hoping against hope that he might yet prove himself innocent, not only because of his personality but as well because the thought that she might have entertained a spy was repugnant to her, and because of the honor of the Dumont family, which was one of the oldest and most important ones in the western hills of the Old Dominion.

Arrelsford meantime completed his preparations by moving the couch which Caroline Mitford had placed before the window back to the wall.

“Now, Mrs. Varney,” he said, stepping far back out of sight of the window, “Will you open the curtains? Do it casually, carelessly, please, so as not to awaken any suspicion if you are seen.”

“But the soldiers, won't they——”

“They are all at the back of the house. They came in the back way, and the field in front is absolutely clear, altho I have men concealed in the street to stop anyone who may attempt to escape that way.”

Mrs. Varney walked over to the window and drew back the curtains. She stood for a moment looking out into the clear, peaceful quietness of a soft spring night. The moon was full, and being somewhat low shone thru the long windows and into the room, the candle light not being bright enough to dim its radiance. Her task being completed, she turned, and once more the man who was in command pointed across the hall toward the room on the other side.

“Are those women in there yet?” he asked peremptorily.

“Yes.”

“Where is the key?”

Mrs. Varney left the room and went to the door.

“It is on this side,” she said.

“Will you lock it, please?”

The woman softly turned the key in the lock, and returned to the drawing-room without a sound. As she did so the noise of the opening of one of the long French windows in the front of the room attracted the attention of both of them. Edith Varney entered the room nervously and stepped forward. She began breathlessly, in a low, feverishly excited voice:

“Mamma!”

Mrs. Varney hurried toward her and caught her outstretched hand.

“I want to speak to you,” whispered the girl.

“We can't wait,” said Arrelsford, stepping forward.

“You must,” persisted the girl. She turned to her mother again, “I

can't do it, I can't! Oh, let me go!”

“But, my dear,” said her mother, “you were the one who suggested that——”

“But I was sure then, and now——”

“Has he confessed?” asked Mrs. Varney.

“No, no,” answered the girl with a glance of fear and apprehension toward Arrelsford, who stood staring menacingly at her elbow.

“Don't speak so loud,” whispered the Secret Service Agent.

“Edith,” said her mother soothingly, “what is it that has changed you?”

She waited for an answer, but none came. The girl's face had been very pale, but it now flushed suddenly with color.

“Dear,” said her mother, “you must tell me.”

Edith motioned Mr. Arrelsford away. He went with ill-concealed impatience to the far side of the room and waited nervously to give the signal, anxious lest something should miscarry because of this unfortunate unwillingness of the girl to play her part.

“What is it, dear?” whispered her mother.

“Mamma,” said Edith, she forced the words out, “he—he—loves me.”

“Impossible!” returned Mrs. Varney, controlling her voice so that the other occupant of the room could not hear.

“Yes,” faltered the girl, “and I—someone else must do it.”

“You don't mean,” said Mrs. Varney, “that you return——”

But Mr. Arrelsford's patience had been strained to the breaking point. He did not know what interchange was going on between the two women, but it must be stopped. He came forward resolutely. The girl saw his determination in his face.

“No, no,” she whispered, “not that, not now!”

She shrank away from him as she spoke.

“But, Edith,” said Mrs. Varney, “more reason now than ever.”

“I don't know what you are talking about,” said Mr. Arrelsford, “but we must go on.”

“But why—why are you doing this?” asked Edith, pleading desperately.

“Because I please,” snapped out the Secret Service Agent, and it was quite evident that he was pleased. Some of his satisfaction was due to the fact that he had by his own efforts at last succeeded in unearthing a desperate plot, and had his hands on the plotters. That he was thereby serving his country and demonstrating his fitness for his position of responsibility and trust also added to his satisfaction, but this was greatly enhanced by the fact that Thorne was his rival, and he could make a guess that he was a successful rival in love as well as in war.

“You have never pleased before,” persisted Edith. “Hundreds of suspicious cases have come up—hundreds of men have been run down—but you preferred to sit at your desk in the War Department, until——”

“Edith! Edith!” interposed her mother.

“I can't discuss that now,” said Arrelsford.

“No, we will not discuss it. I will have nothing more to do with the affair.”

“You won't,” whispered Arrelsford threateningly.

“Don't say that,” urged Mrs. Varney.

“Nothing, nothing at all,” said Edith.

“At your own suggestion, Miss Varney,” persisted the Secret Service Agent vehemently, “I agreed to accept a plan by which we could criminate this friend of yours or establish his innocence. When everything is ready you propose to withdraw and make the experiment a failure, perhaps allowing him to escape altogether and being a party to treason against your own country.”

Edith looked from Arrelsford's set face, with his bitter words, the truth of which she was too just not to acknowledge, ringing in her ears, to the face of her mother. It was a sweet face, full of sympathy and love, but it was set in the same way as the man's. The patriotism of the woman was aroused. The kind of help that Edith wanted in her mother's look she did not find there.

“You must do this, Edith; you must do your part,” said Mrs. Varney.

The resolution of the girl gave way.

“He is there,” she faltered piteously, “he is there at the further end of the veranda. What more do you want of me?” Her voice rose in spite of her efforts to control herself.

“Call him to the room, and do it naturally. If anyone else should do it he would suspect something immediately and be on his guard.”

“Very well,” said the girl helplessly. “I will call him.”

She turned toward the window.

“Wait,” said Arrelsford, “one thing more. I want him to have this paper.” He handed Edith the communication which had been taken from Jonas earlier in the evening.

“What am I to do with this?” asked the girl, taking it.

“Give it to him, and tell him where it came from. Tell him Old Jonas got it from a prisoner at Libby Prison and brought it to you.”

“But why am I to do this?” asked the girl.

“Why not? If he is innocent, what's the harm? If not, if he is in the plot and we can't catch him otherwise, the message on the paper will send him to the telegraph office tonight, and that's where we want him.”

“But I never promised that,” said the girl with obvious reluctance to do anything not only that might tend to harm the suspected, but that might work to the furtherance of Arrelsford's designs.

“Do you still believe him innocent?” sneered the man.

Edith lifted her head, and for the first time she looked Arrelsford full in the face.

“I still believe him innocent,” answered the girl, slowly and with deliberate emphasis.

“Then why are you afraid to give him the paper?” asked Arrelsford, directly with cunning adroitness.

The girl, thus entrapped, clasped the paper to her breast, and turned toward the window. Her mind was made up, but it was not necessary for her to call. Her ear, tuned to every sound he made, caught the noise of his footfall on the porch. She turned her head and spoke to the other two.

“Captain Thorne is coming,” she whispered expressionlessly; “unless you want to be seen, you had better go.”

“Here, this way, Mrs. Varney,” said Arrelsford, taking that lady by the arm and going down to the far end to the door covered by the portieres.

The two disappeared, and it was impossible for a soul to see them in the darkness of the hall, altho they could see clearly enough, even in the dimly lighted drawing-room, everything that would happen. Edith stood as if rooted to the floor, the paper still in her hand, when Thorne opened the sash which she had closed behind her, and entered in his turn the window thru which she had come a short time before. He stepped eagerly toward her.

“You were so long,” he whispered, “coming for me, that——” He stopped abruptly, and looked at her face, “is anything the matter?”

“No.”

“You have been away such a long time that I thought——”

“Only a few minutes.”

“Only a few years,” said the man passionately. His voice was low and gently modulated, not because he had anything to conceal but because of the softness of the moonlight and the few candles dimly flickering upon the walls of the great room, the look in the girl's eyes, and the feeling in his heart. A few minutes, the girl had said!—Ah, it was indeed a few years to him.

“If it was a few years to you,” returned the girl with a violent effort at lightness, altho her heart was torn to pieces with the emotions of the moment, “what a lot of time there is.”

“No,” said Thorne, “there is only tonight.”

Edith threw out her hand to check what she would fain have heard, but Thorne caught it. He came closer to her.

“There's only tonight, and you in the world,” he said.

“You overwhelm me.”

“I can't help myself. I came here determined not to tell you how I loved you, and for the last half hour I have been telling you nothing else. I could tell you all my life and never finish. Ah, my darling, my darling—there's only tonight and you.”

Edith swayed toward him for a moment, completely influenced by his ardor, but then drew back.

“No, no,” she faltered. “You mustn't.” She glanced around the room apprehensively. “No, no, not now!”

“You are right,” said the man. She dragged herself away from him. He would not detain her against her will, and without a struggle he released her hand. “You are right. Don't mind what I have said, Miss Varney. I have forgotten myself, believe me.” He drew further away from her. “I came to make a brief call, to say good-bye, and——”

He turned and walked toward the hall door, after making her a low bow, and it was not without a feeling of joy that she noticed that he walked unsteadily, blindly.

“Oh, Captain Thorne,” she said, just as he had reached the door, “I——”

He stopped and looked back.

“Before you go I want to ask your advice about something.”

“My advice?”

“Yes, it seems to be a military matter, and——”

“What is it?” asked Thorne, turning back.

“What do you think this means?” said the girl, handing him the folded despatch.

She had intended to look him full in the face as he took it, but at the last moment her courage failed her. She looked away and did not see the instant but quickly mastered start of surprise. She was only conscious that Thorne had possessed himself of the document.

“What is it?” asked Thorne, holding it in his hand.

“That is what I want you to tell me,” said the girl.

“Oh, don't you know?” said Thorne, now entirely master of himself.

“No,” answered the girl, but there was something in her voice which now fully aroused the suspicions of the man.

“It appears to be a note from someone,” he said casually, “but it is so dark in here. With your permission, I will light some of the candles on the table, and then we can see what it is.”

(To be continued.)

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Grange

Conducted by R. P. Kester, Lecturer of Pennsylvania State Grange. Grange notes, queries, comments and news items invited from readers. Address all communications for this department to R. P. Kester, Grampian, Pa.

EXTENDING THE ORDER

The increase in membership of the Order during the year 1912 is most gratifying, many of the states making most unusual gains. This growth is due to two causes; first, to the fidelity and effort of officers and members who believe in the principles of the grange, and who are willing to extend those principles, and secondly, to a more intelligent understanding on the part of the public of those principles. In response to that universal impulse to move on, the farmer is seeking the most effective agency to help him in obeying that impulse. Naturally, he turns to the grange because of its history, its principles and its possibilities.

The grange is no longer an experiment. It has passed out of its infancy. The trials and buffetings of its 45 years have developed a strength and power that insures permanency. It is the national farmers' organization. Legislators not only listen to, but seek its advice. Favorable legislation, as well as improved agricultural conditions generally, have been brought about largely by the influence of the grange. May the grange be still more prosperous in 1913. Will you help?

GRANGE EDUCATIONAL COMMITTEES

The grange has always stood for the advancement of education, and for this purpose every grange should have an educational committee. Such a committee, composed of intelligent, tactful men and women can aid much in making the schools of their community better meet the needs of that community. School officers and teachers are usually glad to co-operate with those who are genuinely interested in education.

There are few localities where great improvement in the physical surroundings is not needed. Public sentiment in favor of improvement can be aroused in any community, if some one will take the lead. By this means school grounds may be made more respectable and even attractive. The school rooms often need adorning. Their sanitary condition can often be improved by providing some simple means of proper ventilation—something that is sadly neglected in most rural schools. The outbuildings, too often the target of the thoughtless and careless as well as the vicious, usually need more attention than the average school board gives them. How can we expect children to develop a care and respect for public property when that property is so neglected that it does not inspire respect in the minds of the children?

The moral atmosphere of the country school, as well as the town school, often needs looking after. If the teacher feels that she has the moral support of such a committee and the community back of her, she will feel encouraged to enforce better conditions and better conduct; also, the spirit of public sentiment in these things will be caught by the pupils.

An active committee would also have an influence in shaping the curriculum and in the adoption of school books with reference to the subject matter they contain, so that the educational needs of the rural child would be better met. Above all, this committee could create and foster a community spirit in favor of higher education—something that is mightily lacking in many localities.

"THE HIGH COST OF SELLING"

An interesting and instructive article on "The High Cost of Selling" appears in The World's Work for December, written by B. F. Yoakum. He assumes that of the 8 billion dollars' worth of farm products produced in 1911, the farmers sold 6 billion dollars' worth. When these products went into consumption, the public paid 13 billion dollars. In other words, it cost 7 billion dollars to distribute 6 billion dollars' worth of products from the producer to the consumer.

A common conception is that the railroads get the bulk of this amount, yet Mr. Yoakum refers to government figures, which show that the total railroad earnings last year from all agricultural products, including cattle, was about 495 million dollars, or less than 4 percent of the 13 billion dollars paid by the public for the products of the farm.

It is the elaborate and expensive system of selling, in which too many nonproducers feed at public expense, that lowers the price to the producer and raises it to the consumer. The first step in improvement is to "arouse the farmer to the fact that he has allowed an unsound economic condition to develop which makes him the victim of an army of profit takers. The systematic education of the farmer in marketing has begun. It is being carried forward by a large and increasing number of associations, by the railroads and many big corporations. Viewed from a selfish standpoint, every extra dollar that the farmer gets increases his purchasing power. Even the government has shown signs of interest in this matter of better marketing."

Mr. Yoakum's investigations led him to the following table, as showing the distribution of the 13 billion dollars:

	Percent
Received by the farmers........	46.1
Received by the railroads......	3.8
Legitimate expense of selling...	9.2
Waste in selling................	12.0
Dealers' and retailers' profit....	28.9
Total paid by the public........	100.

The waste referred to above is occasioned by the unscientific method of marketing and the multiplicity of small retailers who must live and meet expenses on a relatively small business. Mr. Yoakum says further: "It is a truism that in such a country as ours the prosperity of the farming class is the prosperity of the whole country. I do not believe he gets enough for his products; that is, not as large a share of what the consumer pays as he should. He works harder and longer for his money than any other class of men I know."

It is reasonable to assume that before any great stride in improving conditions can be made, farmers must be so associated together that they can have a mutual understanding for a common purpose. In the Declaration of Purposes of the grange we find this: That it is one of its purposes to afford an opportunity to "meet together, to talk together, to buy together, to sell together," and thru the educational influence of the grange, aided by other agencies, the farmers of this country are more nearly ready than ever before to co-operate.

There is just now being organized by the Pennsylvania State Grange a co-operative association known as the Keystone Exchange, which has for its purpose the elimination of surplus middlemen in both buying and selling. A state charter has been obtained and fuller information will be given in these columns later.

GRANGE CORN CONTEST

At a meeting of Bradford Pomona, No. 3, with Towanda Valley Grange, at West Franklin, in March, Worthy Lecturer Lilley gave a very able talk on corn growing. Following this, Bro. L. C. Burroughs moved that the Pomona offer three prizes for the ten best ears of corn grown in Bradford County by a patron and exhibited by growers at the Pomona meeting in November.

The contest created a great deal of interest during the season. But on account of the wet weather, which put back all kinds of fall work, corn husking has been very late and only nine exhibitors were present with their corn. The judges were Pomona Master, Overseer and Lecturer. They awarded first prize, $15, to L. B. Stone, LeRoy, Pa., on Golden Tuscarora Dent, which scored 84½. Job Mahood, of Troy, took second, $10, on Eight-rowed Yellow, and third, $5, on Leaming. The most perfect single ear of corn on exhibition was an ear of Eight-rowed Yellow, grown by Boyd Bailey, of LeRoy.—L. C. B., Bradford Co., Pa.

NEW YORK STATE GRANGE MEETING

The executive committee of the New York State Grange recently issued the program of the 40th annual session, to be held in Buffalo, on February 4-7, 1913. The Broadway Arsenal has been secured for the meeting, and the Hotel Statler will be the headquarters for officers and delegates. The rates will be $1.50 for room and up on the European plan. Several other hotels on the same plan are provided and six on the American plan. The rates at the latter hotels run from $2.00 to $3.00 per day. Rooms can be secured on application to Henry B. Saunders, Chamber of Commerce, Buffalo.

The session of the grange will open on Tuesday morning, February 4, and the usual order of business will be followed. On Tuesday evening there will be a public meeting under the auspices of the Erie County Pomona Grange. The sixth degree will be conferred on Tuesday evening. The only officer to be elected this year is one member of the executive committee. The executive committee and grange stenographers will be located at the convention hall, and a restauranteur has been engaged to furnish noon and evening meals in the same building, all of which will be for the great convenience of the delegates. Efforts will be made to have the sixth degree class the largest ever initiated into this beautiful degree. The 40th session of the Empire State Grange gives promise of being a record breaker in several particulars.

GRANGE NOTE AND COMMENT

Great Grange State.—When the National Grange meets in New Hampshire, next November, it will have opportunity to learn at close range what a highly-organized grange state is like. New Hampshire has a grange in every township, and a few over. There are 25,000 farms in the state. There are 30,000 grangers. It incites the imagination to lively activity to think what an Order ours would be if every grange state were so thoroly organized.

National Executive Committee.—The new National Grange Executive Committee is constituted as follows: C. S. Stetson, of Maine, chairman; C. O. Raine, of Missouri; F. N. Godfrey, of New York, and ex-officio, National Master Oliver Wilson.

What the Grange Is.—Here is as good an estimate of what the grange is and is seeking to be and to do, as we have anywhere seen. It is from the Spokane (Wash.) Spokesman-Review: "The National Grange is an illuminating and suggestive instance of the great power for good in the social, public and economic life that an organization can be, when it has clear vision of needs, high standards for business and politics and firm and persistent urging toward its goal ahead."—J. W. Darrow.

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Veterinary

(Conducted by W. C. Fair, V. S.)

(Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also name and address of writer. Initials only will be published. When reply by mail is requested, it becomes private practice, and a fee of $1 must accompany the letter. This is one of the most valuable columns of the paper and we invite readers to make use of it. Clippings from this column, when properly preserved and classified, would make one of the most valuable medical symposiums a farmer stockman could obtain.)

Surfeit—Eczema—Worms.—I have a horse that is inclined to rub and bite himself. Have given him medicine to kill worms, but it failed to relieve him. I wish you would tell me what to give him and how to take care of him. M. I. F., Swedesboro, N. J.—Mix together equal parts ground gentian, fenugreek, powdered rosin, bicarbonate soda and salt. Give him a tablespoonful or two at a dose in feed, three times a day, and he will soon show improvement. Apply one part coal-tar disinfectant and 50 parts water, once a day. The horse should be well groomed, twice a day.

Bursal Swelling.—I have a mule, seven years old, that has a soft bunch on outside of fore leg, situated three inches above knee. When pressed it feels soft. This puffy swelling came on some 18 months ago. I would like to know what I had better apply. H. L. H., Red Lion, Pa.—Apply equal parts powdered alum, boracic acid and tannic acid, twice a day. If the skin was not sore, it might be a good plan to apply tincture of iodine every day or two.

Eczema.—I have a bunch of 20 hogs that will weigh about 75 lbs. each. They are inclined to itch and rub themselves. They are not bad, but am inclined to believe that they do not rest well and are not thriving as well as they should. The skin appears to be dry and scaly. B. G. T., Meadville, Pa. —Apply one part kerosene and 10 parts vaseline, three times a week. Feed them some cooking soda, two or three times a day.

Rheumatism.—Some six weeks ago my four-year-old horse began to show a little lameness in right hind leg, and he has grown a little worse ever since. He eats plenty of feed, but has not taken on any flesh. I gave him worm medicine, but it failed to help him. W. M. Z., Mercer, Pa.—Give him 2 drams sodium salicylate, 1 dram powdered colchicum and 2 drams powdered nitrate potash at a dose in feed, three times a day. Apply equal parts alcohol and spirits of camphor, twice a day.

Thoroughpin—Sitfast.—I have a valuable 5-year-old gelding that is lame in hock joint, said to have been caused by kick from another horse. I fail to find scar or tender spot, but there is a swelling on each side of hock. This bunch is entirely confined to the hollow spaces on sides of hock. With exercise the swelling reduces, but after a day and night rest the swelling returns. I have bathed it in hot water every second night and applied liniment, but it fails to give satisfactory results. These bunches first appeared some five weeks ago. This same horse also has a small nub about as large as a small marble on side of shoulder, back of collar, which I have not been able to reduce. It is not deep seated and is quite movable. C. J. B., Aurora, N. Y. —If you will apply equal parts spirits of camphor and tincture iodine to puffs every day or two, you will gradually reduce them; however, you will find it difficult to completely absorb these bunches. The small bunch in shoulder should be cut out. Then apply 1 part iodoform and 10 parts boracic acid to sore made, twice a day.

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WITH THE COMPLETE OUTFIT

"DAPPLE"

"Dapple" is a beautiful three-year-old dappled-chestnut Shetland Pony 42 inches high, with Silver Mane and Tail. He weighs about 300 pounds and is pretty nearly worth his weight in gold. Of the 83 Shetland Ponies we have given away to boys and girls we believe "Dapple" is the prettiest. In fact you very seldom can get a pony of this color. You may have seen lots of ponies in Circus Parades, but you never saw one prettier than this pony "Dapple" that we are going to give to you or some other boy or girl. We selected him out of 100 ponies at the famous Heyl Pony farm, Washington, Ill., and you'd be the happiest child alive if "Dapple" were yours. Hitched up to his nobby pony wagon he will haul you and all your boy and girl friends that can pile in, just about as fast as you want to go. And when you are not riding or driving him he will play with you and you can teach him to come when you whistle, and lots of cute tricks. Didn't you ever notice what good times children have who own ponies and how pretty these cute little fellows look when trotting up the road? Everybody runs to the door and stops to look at a Shetland Pony going by. Can you think of anything you would like to own better than "Dapple?" Read this page through carefully and then send us your name and address at once.

Here's "Dapple"

THE OUTFIT

And best of all we send free with "Dapple" the complete Pony Outfit just as you see it in the picture. Besides the Pony, the Pony Buggy and the Harness shown we send a Saddle and Bridle, which would make you the most complete outfit that money could buy. You could ride horse-back or take all your boy or girl friends driving everywhere. The Pony Wagon is just the most comfortable riding and easiest pulling we could buy for our purpose. We have given away so many that we know exactly what kind most boys and girls like. The handsome nickel trimmed harness looks just fine on "Dapple" and the riding bridle is imported and the saddle which we also send we had made to order for "Dapple." No child, no matter how rich his parents may be, owns a nobbier or more desirable pony and outfit than this one which we shall send free and all freight with express charges paid. Read down below what some of our pony winners say about their ponies and outfits—how proud and happy they are—and see if it doesn't make you want one, too. This is surely the best chance you ever had to get a Shetland Pony, so if you haven't any and think you would like to have us give you one, send your name and address to us right now so it will get to us quickly.

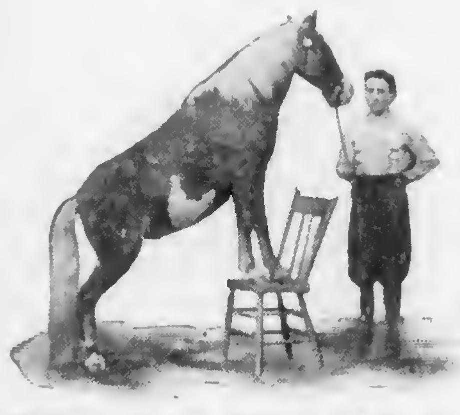
Send Us Your Name Today

If You Want to Own "Dapple"

As soon as we hear from you we will tell you how to become a contestant for "Dapple." Don't let anybod persuade you that you cannot win this pony because our plan of giving ponies away is different from others. The fact that we have already given 83 ponies to 83 boys ad girls all over the United States from the State of New York to the State of Washington is proof that we give them away. The Webb Publishing Campany publishes The armer's Wife and The Farmer. The banker or postmaster in your town knows that we are one of the largest publishing house in the United States so we can well affod to give ponies to boys and girls to advertise our papers. We never heard of one of these 83 boys and girls until they wrote and told us they wanted a pony which hows how fair and square our pony contests are, and no matter where the winner lives "Dapple" will be sent without any cost to you. You must send your name andiddress right away.

We Have Given Away 83 Ponies

Here Are Pictures of Some of Our 83 Lucky Pony Winners anl the Ponies We Gave Them



"Roine," Clarence Busick, Adams Co., Indiana

"I live seven miles from Decatur, Ind. I won a pony in The Farmer's Wife Contest. My pony's name is 'Roine.' When I go to the gate and whistle 'Roine' will come to me. I drive him to school with my three sisters. The scholars think that is one of the nicest outfits that a boy could have to go to school with. Before The Farmer's Wife gave 'Roine' to me I was absent from school for more than a year because I was sick and it was too far for me to walk. When the doctor heard I had won a pony he said it was one of the finest things I could have for my condition, to be out of doors all the time. This was quite interesting to me, and I am glad to say I am now well again, and the doctor says 'Roine' has done his share in it, and also The Farmer's Wife of St. Paul, Minnesota, who gave him to me."

Clarence F. Busick, Adams County, Indiana, is one of our Lucky Pony Winners, and here is his picture and part of his story.

"Jerry," Cleta Johnson, Douglas Co., Kansas

"I have the dearest little black Shetland Pony named 'Jerry' which The Farmer's Wife sent me free all the way from St. Paul up in Minnesota out here to Lawrence, Kans.

"When I first started out to get my friends to help me win a pony, I can tell you it was pretty hard work. Some of them laughed at me and made fun of me and said: 'Oh, you can't win a pony.' However, I entered the contest, and now have 'Jerry' as proof that the company did as they agreed.

"I took 'Jerry' down to the Douglas County Fair at Lawrence, Kansas, to see if he could win a prize, and he took the first prize of $6.00 in cash over all the ponies there. When they tied the blue ribbon on 'Jerry' he acted more proud than ever, and how the people in the Grand Stand clapped their hands and cheered."

This is a part of a letter written by **Cleta Johnson,** Douglas Co., Kans., who is another of our 83 Lucky Pony Winners.

"Sonny," Elmer Holt Allamakee Co., Iowa

"I am a little boy 10 yrs old. I weigh 87 pounds and have light haiand blue eyes. But what I want to tell you abut is my pony 'Sonny,' which the Webb Pblishing Company, publishers of The Farme's Wife, gave me. 'Sonny' is the finest pony in these parts and he and his outfit are betir than $500 to me.

"I went to the depot tomeet my pony the day he came. I could har him whinnying, but could not see him. hen I saw him in a little crate in the expres car. They lifted him down and I took hi out of the crate and I was so happy I couldn't talk.

"I have lots and lot of good fun with 'Sonny' and no money culd buy him. He goes as fast as he can whn we go after the cows at night. I am nevr going to sell him, and 'Sonny' is so goodhe makes me feel happy all the time."

This is what **Elmer loth** of Allamakee County, Iowa, has to say because he, too, is one of our 83 Lucky Pon Winners.

"Mac," Ruth Mead, Saline Co., Missouri

"I shall never forget my first drive to town with the Shetland Pony which The Farmer's Wife gave me. We hitched 'Mac' to my beautiful little cart, and as we drove through Main Street we attracted as much attention as if we had been a circus parade, for it was the only pony outfit in town. Men, women and children came out and stood all around to look at 'Mac' and pet him, and how proud of him I did feel.

"He is so gentle and good natured and will stand with his fore feet on the porch or on a box and let us slide off his back to the ground. I wish every little boy and girl had a pony and cart like mine and had the jolly time I have with 'Mac,' and I hope they will enter The Farmer's Wife Contest and get a pony half as nice as 'Mac.'"

Ruth Mead, a little girl in Saline County, Mo., still another of our 83 Lucky Pony Winners, writes this and a lot more about the Shetland Pony we gave her.

Notice that we print the photographs of these four of our 83 Lucky Pony Winners and the ponieswe gave them free, which removes all doubt of the fact that we really do give away live Shetland Ponies. Furthermore we promise to give you the full adresses of any of these four winners and also the complete names and addresses of any of the other of our 83 Lucky Pony Winners upon receipt of a request from you. Now, doesn't that make you feel positive we will do exactly as we say in the contest? And right here we want to tell you that we have a BIG SURPRISE for you which will DOUBLE YOUR CHANCES of winning a pony. We haven't room to explain it here, but we will tell you AS SOON AS WE HEAR FROM YOU. Remember, you can't win "Dapple" till you send us your name, so sit down and write us at once. Don't miss this opportunity!

SEND YOUR NAME TODAY

Our ponies are given away so quickly that you will stand a better chance to get this one if you sit right down and write us a letter or a postal card or send the coupon opposite filled out with your name and address (either way will be all right). The work we require you to do to become a contestant for "Dapple" is something that any boy or girl who can drive a pony can do, and any child who becomes a contestant will win a fine prize, even if he fails to win "Dapple" which is the best prize of all.

CUT OUT AND SIGN THIS COUPON OR COPY ON A POSTAL CARD AND MAIL TODAY

THE FARMER'S WIFE, 570 Webb Bldg., St. Paul, Minn.

Please send me Certificate of Entry, and pictures of "Dapple'and tell me how to take care of Shetland Ponies. I haven't any Shetland Poy and want to own "Dapple."

Name.................................... R F D ....

P. O.................................... State ....

THIS COUPON IS GOOD FOR 1000 VOTES FOR "DAPPLE"

EACH CONTESTANT A PRIZE WINNER

All contestants will surely get a prize of their own choosing from a list which we will send them. Besides the Pony Outfit and Twenty-five Grand Prizes we shall offer Gold Watches, Base Ball Outfits, Gold Bracelets, Fountain Pens, Hand Bags, Flash Lights, Rifles, Shot Guns and dozens of other desirable prizes. If you become an enrolled contestant in this Pony Contest you can't lose. But don't let anyone persuade you that you can't win "Dapple" because you have the same chance as any other child.

Be sure to address postcard or envelope **THE FARMER'S WIFE** 570 WEBB BUILDING, ST. PAUL, MINNESOTA

PENNSYLVANIA FARMER

AGRICULTURE
THE KEYSTONE OF
NATIONAL PROSPERITY

ESTABLISHED 1880
PUBLISHED WEEKLY

VOL. 33.—No. 3. PHILADELPHIA, PA., SATURDAY, JANUARY 18, 1913. 50 CENTS A YEAR.

Rutgers College

County Farm Management Work

By E. K. HIBSHMAN,
Chief of Farm Demonstrators

Within the last few months, there has been started in Pennsylvania a line of work known as the Farm Management Studies and Demonstration Work. In this work the following parties are co-operating: The Office of Farm Management of the United States Department of Agriculture, the Department of Agricultural Extension of the Pennsylvania State College, and local county organizations. The United States Department of Agriculture started work along similar lines thruout that section known as "the cotton states" a number of years ago, and it has shown very good results. The last Congress appropriated liberally for the work to be extended thruout the states not included in the cotton belts. The Office of Farm Management has asked the agricultural colleges of the different states to co-operate with them in this work. In the case of our Agricultural College, the amount of funds was limited, but the Department of Agricultural Extension considered this work as educational, and was glad to assist to the best of its ability. The funds provided by the United States Department of Agriculture and the Pennsylvania State College were not sufficient to pay the total salaries and expenses of the men in the field, and work was started in those counties where local organizations agreed to pay a portion of the salary and expense of a man to be located in that county. In most cases, it was the Chamber of Commerce of one of the larger towns in the county which agreed to pay this portion of the expense. As a result, there are at the present time men located in the following counties in Pennsylvania: Bedford, Blair, Butler, Mercer, Washington and Montgomery. The Boards of Trade in Altoona, Butler, Greenville and Washington realized that if by locating an agricultural expert in that county they might help to improve the agricultural condition of their county they would indirectly benefit themselves. In other words, if they could help the farmers of the surrounding farming communities to make more money, they would either deposit that money in the banks or spend it in the stores, and in either case it would come back to the town. With this idea in view, Chambers of Commerce have contributed liberally toward the necessary expense of locating a man in the country. In many places the local granges are materially aiding the Chambers of Commerce in starting this work.

NINE GOOD MORTGAGE LIFTERS.
Uniformity in Color and Size Indicate Good Breeding.

The man located in the county is known as the County Agent or Agricultural Advisor. The men usually selected for this position are young men who have been raised on the farm, and who are graduates of an agricultural college, or had the equivalent in training. These men devote their entire time to visiting the farmers and helping them with their problems right on the farms.

When the County Agent first enters his territory he makes a careful study of the existing conditions on the farms of that county. He systematically studies the county, township by township, visiting as many farms as he can in each township, and finds out what type of farming each farmer is doing and what the problems are on that particular farm. Later on, when he has gathered information from all parts of the county, he will design his work in such a way as will best meet the conditions in that county. In some counties these problems are dairying, in other counties fruit work, and in still others the improvement of pastures or the growing of vegetables. The County Agent makes it a point to spend at least one day of each week in his office, in order that the farmers may know where they can find him at certain times. During the winter months he will devote his time to educational work, co-operating with the granges, public school superintendents or any local organizations working along these lines. As soon as the season opens up in the spring of the year he will give his attention to such problems as testing seed corn, testing clover seed, home mixing of fertilizers, etc. In different places, he will conduct experiments on corn, clover, fertilizers, etc., and will call meetings from time to time to have the farmers see these experiments.

HILLING IN POTATOES. (See Article on Page 2.)

An effort will be made by these County Agents to organize corn and potato clubs, in which the public school children will compete for prizes. Thruout some of the dairy sections an effort will be made to organize cow testing associations.

One of the duties of the County Agent is to study the systems of farming and the conditions of the more successful farms, and carry that information to the other farmers who have not been so successful. These men will, in a way, replace the bulletins which in the past have been sent to the farmers, but which have not been considered very successful for several reasons—one of them being that the farmer would not read the publications, and in many cases the bulletins have been written by a scientist in such a way that the farmer could not readily understand the information they contain. This County Agent will carry this same information to the farmer, but will take it directly to his farm and explain the results of the investigations in language which the farmer can understand. In many cases, demonstrations will be held which will show more clearly the results which are constantly being determined by our scientists at the experiment stations.

The work in each state is in charge of a State Leader, who is appointed co-operatively by the United States Department of Agriculture and the Agricultural College in the state. The men in the different counties report each week to the State Leader, and constantly keep in touch with him concerning all their problems in the county.

In Bedford County, Pennsylvania, this work has been conducted several years, and Mr. A. B. Ross, the County Agent, located at Schellburg, has shown some very marked results. Some of the most important successes have been the inoculation of clover seed, the introduction of soja beans and alfalfa. He has also induced the fruit growers of Bedford County to carefully grade and pack their products before placing them on the market.

On September 1, Mr. R. B. Dunlap was located at Altoona, Blair County; Mr. H. S. Adams at Butler, Butler County; Mr. J. M. McKee, at Washington, Washington County, and Mr. A. K. Rothenberger at Pennsburg, Montgomery County. On October 1, Mr. C. G. McBride was located at Greenville, in Mercer County.

POTATOES IN PENNSYLVANIA

By E. A. Rogers, Brunswick, Me.

Probably there is no state where potatoes are grown so extensively on commercial fertilizers as is the case in Maine. There is a good deal of difference in the results to be obtained from a fertilizer by the conditions the soil is in on which it is used. Soil that is very deficient in humus will not grow a good crop of potatoes, or anything else, no matter how much fertilizer is applied; hence, it is not fair to condemn a brand of fertilizer until the user is sure that it does not contain the amount of plant food its guarantee calls for. However, if one has a good sod to work up and turn under, and has done this as described in my first article, he should get a good paying crop but not a maximum one.

No one today can tell what a maximum crop is for any soil, and I have not the least doubt but what 600 bushels can be grown per acre in Pennsylvania when the conditions are made somewhere near right, which it is possible for any farmer to do. The Maine potato grower is more and more using a 4-8-10 fertilizer. A few years ago a 4-6-10 was more frequently used, but it contained more or less filler, while a 4-8-10 does not carry but little. In fact, one buying the latter gets almost pure high-grade chemicals, if the fertilizer is made up as it should be. Not only should the potato grower get high-grade fertilizer, but he should feed it to his crop in the manner that will allow that crop to get the most out of it. Many think that by using a 4-8-10 fertilizer (which is nearly all pure chemicals) of the best grade, that that is about all there is to it. This is not so. To get the best results out of a fertilizer, not only should the soil be filled with humus, and be properly prepared, but the fertilizer itself should be so made up that it will feed the growing plants the season thru with all three of the elements they need in proper proportion. Now, what is a proper proportion for potato plants when they are just coming into blossom would hardly be called such toward the later part of the season, when tuber formation is going rapidly on. Thus the writer has his potato fertilizer in two brands, both a 4-8-10, but differing in the make-up of the nitrogen content.

Every potato grower knows that it is from two to six weeks after he plants his potatoes before there is a root system to take up and use free nitrogen. Now, suppose the fertilizer he uses in the drill at planting time has a large portion of its nitrogen in nitrate of soda, which will at once dissolve with contact with the soil. There would be at once a lot of available nitrogen free for plant use in the soil from the fertilizer, but no potato roots to take it up and use it. With a porus subsoil, or in case of heavy rains, on most any kind of soil much of this would be lost. Nitrate of soda is one of the best and cheapest forms in which we can buy nitrogen, but it is not practical common sense to put it into the soils weeks before the crop we are intending to grow can use it. Therefore, the brand which we use at planting time should have its nitrogen in forms not quite so quickly available as is nitrate of soda, but made up of dried blood, fish scrap, sulfate of ammonia, and last, but not least, of high-grade meat tankage, and if there is a portion of this fine ground bone, all the better, as some nitrogen will be furnished at the very last end of the season, which is well. Of the above, the dried blood will begin to give up its nitrogen just as soon as decomposition begins to take place in the soil, but when the soil gets warm enough for this, plant growth is taking place. So much for the planting brand.

In the hoeing brand, which is used after the plants have broken ground and have more or less of a root system, it is well to have nearly half of its nitrogen content in the form of nitrate of soda. In the case of potatoes, the quicker, stronger growth we can get in the first few weeks after they break ground the better. The growth prevents weeds, shades the soil and prevents drying out, and everyone knows there is much less insect injury on very rapidly growing plants than on those of stunted growth. No potato grower can afford to use much less than one ton of a 4-8-10 fertilizer per acre in our Eastern States, at least, and this should be about equally divided between the planting and hoeing brands. If more than this is used, I should use the planting brand, and broadcast and harrow it in before planting the potatoes. It is not safe to use much more than one-half ton in the drill when planting, unless whole potatoes are used for seed, when any amount up to one ton per acre can be used with but little danger of burning the seed.

After the potatoes have broken ground so that the rows can be plainly seen, the cultivator should be run between the rows, but should be kept from six to ten inches from the plants, in order not to break off any of the roots. This will leave quite a space along the rows where there may be weeds untouched by the cultivator. The field is now ready for the balance or the half ton of the hoeing brand. The planter can be used for this work by taking off the plows but leaving on the fertilizer attachment and disk coverers. Gauge the machine to apply one half ton of fertilizer per acre, and drive right over the rows, strewing the fertilizer in a broad stream along the rows and over the plants while the disk coverers will bury the plants, fertilizer, weeds and all entirely out of sight. All the little weeds will be killed by this burying; in fact, I have only one weed which will force itself up thru this covering of soil, and that is the Canada thistle. The potatoes will force themselves right up thru in a very short time. Usually in two days nearly all will be thru again. What fertilizer that has landed on the potato plants will do but little if any harm when they are only three or four inches high, provided they are well covered with soil, for the new growth comes from the center of the plant, and most of the leaves buried stay buried. If there are any eggs of the Colorado beetle on the buried leaves, these will be destroyed.

This process of burying leaves the field just as free of weeds as it was after harrowing, before the potatoes were planted, and with the least possible amount of work. The faster a team walks, the better the work will be done, and on long rows it is possible to bury nearly an acre an hour and apply the half ton of the hoeing brand of fertilizer at the same time. There is no way I have ever tried that will do so much with so little work.

Again, wherever a potato plant of this size is buried up, it will throw out a new set of roots from every leaf joint buried, and as there is usually two or three of these joints, there will be found just that many more sets of roots added to the plant's feeding capacity, and these are all above this hoeing brand of fertilizer. Now, as there is a root system below, and it is only a matter of two or three days before these new roots have started above, there is but very little danger of losing any nitrogen with nearly half of the nitrogen in the hoeing brand in the form of nitrate of soda. On the contrary, it is where and at a time where it will force a very rapid, strong growth to the plants which is much needed at this time if a maximum crop is to be expected. These ridges should not be worked down after they are once thrown up and the extra root system secured. There is no question but what the burying of the plants checks their growth for a few days, but the extra roots they will make and the quickly available nitrogen will so start their growth that usually in even one week's time they will have made a greater growth than those not buried. If, after they have been buried long enough to kill the little weeds along the rows the ridges are worked down, the new root system has been destroyed and the checking of their growth by burying is not recovered.

If weather conditions are unfavorable to rapid growth, there may be a new crop of weeds get started before the potato plants shade the ground enough to prevent weed germination. In this case, the Maine grower usually throws up more soil on the ridges to smother them. This makes rather more of a ridge than the writer likes, and is usually rather more than most of the two-horse diggers can handle unless the soil is in perfect condition for digging. Many ask if this ridging does not allow the soil to dry out much more than level cultivation. My experience is that it does not, as this method forces the potato plants to make a growth that entirely covers the ground in a short time. Again, it puts so much soil over the roots that if there is any cool, damp soil anywhere it is along the bottom of the potato rows. The grower who has been only plowing five to six inches no doubt fears this, and I doubt very much if it would work out on land handled in that manner. From a personal knowledge, I know that the system, as a whole, works out as well in Pennsylvania as it does in Maine. In my next article I will treat on potatoes for seed, and how to handle and get them ready for planting.

FARMERS' WEEK

The seventh annual Farmers' Week at State College ended January 2 and was a greater success, from all standpoints, than any which has gone before. There were about 640 farmers in attendance, and all showed a keen interest in the many subjects which were discussed. Leaders in agricultural work from this and other states were present discussing their respective subjects, and no farmer could spend even a day there without taking away a fund of information which could not help but make him a better farmer. Not only were the lectures of the utmost interest, but the various demonstrations which were given in all lines, where the subject was possible to demonstrate, were of the greatest value. This year's Farmers' Week was closely watched on all sides. The one question in the minds of all concerned was whether the week would prove as successful as the preceding ones, whether the recent losses in the faculty would impair the efficiency of the college or its ability to conduct a good Farmers' Week. As was before stated, the attendance this year was larger than ever. Not only was this true, but the lecturing force was of a higher standard, the lectures were more practical and valuable and the general tone of the meeting was better than in former years. This can mean only one thing, that State College is stronger today than ever before; she has withstood a crisis and is better for it. The men who have left the teaching force were all good men, but able men are coming in to take their places and help build the standard of the college even higher. The farmers of the state may feel proud in having this great, strong institution to foster their agricultural interests. To all farmers who missed Farmers' Week this year, make definite plans to get there next year. These meetings are too valuable for any farmer to miss, regardless of what branch of farming he may be doing.

"BLACK LEG" OF POTATOES

Potato growers have in general rested in the belief that their crop is more immune from serious insect and fungous attacks than are the fruits or many of the market garden crops. They have considered the beetle to be their most serious insect enemy and either or both of the blights the diseases to be most carefully watched. But the time has come when the potato is prey to just as many serious pests as many other crops. The stalk borer or weevil, for instance, is much more to be feared than the beetle because he works in hidden places, where we can not know of his presence until the damage is done. Likewise "black leg," sometimes known as "black stalk rot," or "stem rot," is a disease not so well known as the blight, and for that reason is more to be feared, since less attention will be given to it until a great amount of damage is done.

"Black leg" is a disease caused by a bacterium or bacteria which attacks either the tuber or stem of the plant. It must not be understood that there is one specific organism which causes this disease, but rather that there are probably several bacteria which produce attacks so similar that, to the casual observer, they seem identical. Hence, the term "black leg" applies to a condition rather than to a particular disorder. The symptoms of the disease are clear cut enough, so that identification is simple and there should be no excuse for confusing it with any other trouble. As before stated, both the tubers and stems are attacked.

The first indications of "black leg" are shown by a general unthrifty appearance of the plant, which is usually dwarfed and undersized. The leaves are frequently curled and folded and the branches grow more upright than normally. The foliage gradually turns from a pale green to yellow, after which

the plant dies. Some cases have been reported when the disease has progressed so rapidly that the plants fall over in a wilted condition during a single night. These symptoms are more or less common to several other bacterial diseases, and it is only upon examination of the stem and tubers that one can be sure as to the identity of "black leg." The stems will be found to be jet black over a surface extending from the crown to three or four inches above the surface of the ground. The young tubers are usually decayed and may be attacked by a soft rot.

It is the belief of many farmers that the "black leg" bacteria are carried over from year to year in the soil. But this is probably incorrect and is contrary to all experiments conducted along these lines. The bacteria winters over in diseased portions of the plant, especially in the tubers; hence, it can be seen that absolute care in selection of seed is essential. It must be remembered that "black leg" does not, under ordinary conditions, produce soft rot, and when such is found it is in all probability due to other organisms which have gained entrance to the tuber.

If care is taken to select only perfect, sound tubers for seed, and to treat these with formaldehyde, the worst infection of "black leg" can be eradicated within two years' time. Formaldehyde is the best disinfectant for home use, and should be made from one pint of 40 percent formaldehyde in 30 gallons of water, in which the potatoes should be soaked for two hours. They then should be spread out in a clean, dry place in the direct sun to dry. This is an inexpensive and safe method of disinfection, and should never be neglected. It has been demonstrated that such a process costs a little less than 4 cents per barrel, or about 20 cents per acre.

After the tubers have been soaked in the formaldehyde, they may be dried on a clean platform, on a piece of clean canvass, or a dry piece of grass land will serve the purpose. The main point is to have them sun dried, since the drying is not only more quickly done in this manner, but the sun in itself is a great disinfectant.

ICE ON THE FARM

A supply of ice for the farm should be considered a necessity, especially on the dairy farm. Farmers ought to be as particular to harvest the ice crop as they are to harvest the potato or the corn crop. While a supply of ice may not have any direct value in bringing in an income, it has uses that can not be estimated in dollars and cents. The cost of providing ice is comparatively small. The gathering of it comes at a season when there is little other farm work, and outside of the labor item, which one can do largely himself, there is not much expense.

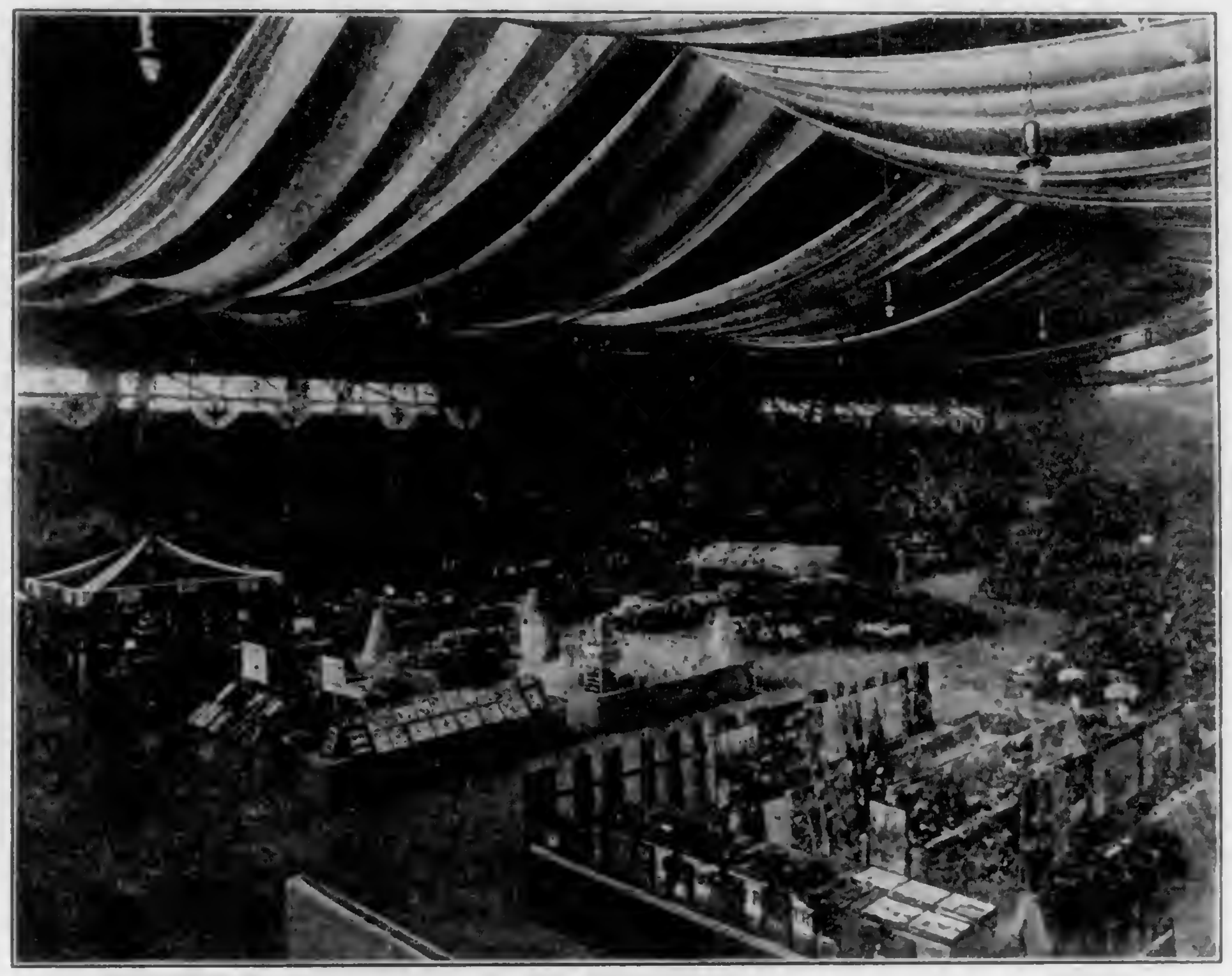
Before time for harvest, it is wise to be prepared. Any building will answer for a storage house, but provision should be made for drainage below and good ventilation above, for if these conditions are not properly looked after there will be a great waste. The drainage must be assured before the ice is put in the building. There are various ways of doing this, a desirable method being to lay tile in the bottom, with slope enough so that the water will run off as fast as it accumulates. Ventilation may be provided by cutting openings in the upper parts of the building. A farmer should not give up a supply of ice because he thinks he has no suitable building. Many use an old hen or hog house and have ice all the year around, even tho it is not as tight as it might be.

Another thing to look after before time for harvest is a supply of sawdust. Sometimes this is hard to find in sufficient quantities when one is ready to put up ice. But by laying in a supply early in the season it can be bought cheaper, and no chances will be taken in not being able to get it when it is needed. A ilberal supply should be provided for properly preserving the ice and overcoming conditions in unfavorable houses.

The source of ice is sometimes a problem. There are few farms, however, that are not within a mile or two of some creek, pond or small lake. Sometimes several farmers can go in together in putting up ice, especially if they do not live far apart. Then one ice house answers for all, and they can co-operate in harvesting the ice. A large amount of ice will keep better than the same quantity in separate lots.

Even if they do not co-operate in storing it together, plans should be made for harvesting it together. In this way the work can be divided among the different ones co-operating and a great deal of labor can be saved. The ice when harvested in this way can be cut and stored easier, quicker and cheaper than when each one goes at it by himself.

Plans should be made for putting up more ice than will be needed, because there will be more or less loss and waste, however careful one is. It is better to have a little left over than not to have quite enough. The amount, of course, will depend upon the size of the dairy and the amount of milk to cool. An ordinary dairy would need perhaps a good sized cake a day, during June, July, August and September, making a total of 120 cakes. To be on the safe side, it would be just as well to put up 180 cakes, which could be done with very little extra cost.—L. J. Haynes, Erie Co., Pa.



BIRDSEYE VIEW OF THE MARYLAND WEEK EXHIBIT.
Showing Wide Variety of Maryland's Products.

WITH THE INSTITUTE LECTURERS

Cameron County

This county, from the standpoint of population, is the smallest in the state, there being only about seven and one-half thousand in the entire county. Of these, approximately one-half are in the town of Emporium, which gives employment to all of its citizens in its dynamite and powder factories, of which there are five. They have a blast furnace, the raw material for which is all shipped in. Because of these conditions and the mountainous surface of the county, not much attention is paid to agricultural pursuits. Indeed, the opportunities for general farming are so much hindered by the hilly conditions that in no one line do they raise nearly sufficient amounts to supply the home demand.

All over the country there are narrow, fertile valleys in which they can raise the choicest of potatoes, and sloping back gradually from these valleys are some pasture lands, while on top are plateaus having an elevation of 1,200 to 1,400 feet, which are especially adapted to fruit raising. As yet, but few orchards have been established, but in our institutes, held in Rich Valley, Howards, Sizersville and Driftwood, much interest was manifested along these lines. They want to know what to plant, how to plant, and how to care for the new orchards.

There is no doubt in my mind but that the possibilities are great and the returns would fully justify the purchase of these cheap mountain lands and the establishment of commercial orchards. The markets are good and the cost of maintenance would be very low.—W. M. Patten.

Indiana County

The farming industries of Indiana County have been seriously hampered by the soft coal operations. However, it still ranks second in the production of buckwheat in the state. Dairying is also carried on to a considerable extent, but in most cases not on a very extensive scale.

The institutes of Indiana County were very well attended and the people showed great interest in all the subjects which were discussed. There is a great demand for institutes in this county, and Mr. George, the energetic chairman, has three or four times as many requests as he can possibly supply. In fact, so desirous have the people been to secure these institutes that this year the county chairman, with the assistance of the people themselves, has given them five institutes with the appropriation given him to hold four. The speakers in Indiana County were J. T. Campbell, L. O. Van Noy and Sheldon W. Funk. Mr. Campbell discussed the various lines of poultry and poultry appliances. He impressed the people with the great importance of vitality in the farm flock, if they wish to secure the highest quality and the greatest number of eggs. He also showed the great importance of handling the hen properly during the moulting season, so that the old hen during this period shall again build up her constitution for the production of the greatest number of eggs. He is a great believer in the open-front, fresh air houses, which give, on an average, 30 percent more eggs than the closed houses.

Mr. Van Noy, one of Bradford County's good dairymen, showed the people the great value, in the form of profits, to be derived from the building up of the dairy herd upon a solid foundation; not only because of the greater amount of milk and butter fat derived from such cattle, but also from the much higher prices for which these cattle are easily sold. He also showed the great value of corn silage as a good and economical feed for the dairy cow.

Mr. Funk spoke of the economy of the home mixing of commercial fertilizers, much of which is being used in Indiana County. He also showed the pleasures and profits secured from the culture of apples and peaches, together with the best methods of growing, spraying and packing the fruit. There are a great number of old apple orchards in the county, most of which, however, are very much neglected. There seems to be fine opportunities in apple culture in Indiana County, as the soil in many places is very well adapted and they have practically no San Jose scale.—Sheldon W. Funk.

All There But the R. F. D. Men

A whopper farmers' institute was held at Hemlock Church, Pike County, Pa. It was remarked that all were there except the farm dogs and the R. F. D. men. Surely it did seem that people just popped up out of the ground, as few homes are in sight. Forenoon sessions and all were thronged alike by a courteous and intelligent rural folk. The total attendance was 1,626, or over 270 per each six sessions. These are very industrious people, and tho Nature has cast their lot amid some adverse conditions, yet a marked degree of comfort and contentment prevails. This is the county of which Horace Greeley said, "It is filled with Democrats, rattlesnakes and bad whiskey." Still we find it a good place to live in in the twentieth century.

Horticulture

WHY NOT GROW MORE PLUMS?

By J. W. Kerr, Caroline Co., Md.

The local markets afforded by the many thrifty towns with 2,000 to 10,000 and more population, present opportunities for profitable plum growing in Pennsylvania well worthy of consideration by fruit growers who are located near enough to such towns to supply them from their wagons. The expense attending this kind of selling will be found considerably less than shipping to the large city markets, dividing up with railroads and commission merchants—or, more correctly, permitting them to do the dividing. Think of it, more than 250 towns, a good proportion of which have from 25,000 to 50,000 inhabitants. Think of the many good housewives living in these towns who are never supplied with nice plums to aid them in providing wholesome and delicious dainties for their tables.

You say you have tried plum growing, but the trees were infested with black knot, leaf blight, etc., never produced enough fruit to pay the taxes on the land they occupied? In too many instances that is a fact—discouraging, too. Most of such failures are, however, not properly chargeable to the plum itself. The judgment exercised in selecting the kind to plant was lax. That good plums can be profitably grown in any county of the State of Pennsylvania is not a debatable question. On any land or location in which the peach can be grown, plums can be produced with much greater reliability and abundance, good plums, too, either for culinary use of eating out of hand, ripening over a period of three months —July, August and September.

No Mystery in Cultural Methods Involved.—A judicious selection of the best varieties of our native species alone, with good, common-sense management, will establish the entire truthfulness of the above claim. And in addition to such, there are a few of the hybrid varieties that can be grown successfully in any county of the great "Keystone State." No sensible farmer would think of putting a bunch of thrifty, promising pigs in a pen, and expect them to keep in health and vigor without generous feed and proper attention; the same forceful facts apply to fruitful trees.

Whether a dozen, a hundred, or more plum trees are planted, the land should be tilled and kept clear of foul weed growth thruout the growing season. If anything in addition to plum trees is planted in the land—potatoes, corn or vegetables of any kind, such as require frequent and clean tillage—all the better; for it is presumable that sufficient manure will be applied to meet the needs of all.

Plums of our native species are less liable to injury by frost when in blossom than either the Japan or European species, or the peach, for the reason that they are less sensitive to spring sunshine, and do not bloom as early, by several days, as the others. Dividing the state from east to west by a central line, some kinds that can be grown with profit in the southern half would be less desirable for the extreme northern tier of counties in the northern half. In these counties, adherence to varieties of our native species, in determining upon a list of kinds to plant, is the proper course to pursue; starting with the Munson, or Milton for first early, followed by Whitaker or Wildgoose, Hanson, Downing, Prairie Flower, Reed, Benson and Wayland, making a collection of eight varieties, covering the season from July 4th to October 1st.

The important fact that none of the kinds named are self-fertile must by no means be overlooked. In a planting of a dozen trees, two trees at least of a kind that will pollinate the others are indispensable to the production of good crops. The Newman is a sure and safe pollinator for any of the varieties of the Wildgoose family or group. In planting a larger number, every fifth row should be a variety that will supply plenty of effective pollen for the others.

In the southern half of the state greater license in the selection of trustworty bearers is afforded. In addition to those named for the northern part, Berger and Yosebe and Chabot will succeed; these are pure Japans. The Berger is an early dipening free-stone, for which there is little trouble to find sale in any local market; red in color, about the size of the largest damsons, and quite satisfactory for preserving where seedless preserves are preferred. The Yosebe—or Earliest of All, as it is now called—is, when fully ripe, a darker red, perhaps a trifle larger than Berger and a few days earlier, a cling-stone, tree a heavy bearer, but not nearly so fine and handsome a grower as Berger. The Chabot is much later in season, much larger, entirely overspread with red when fully matured, tree quite upright in habit, and bears its great loads of fruits on spurs along the strong limbs, insuring it against splitting and breaking. This variety is far more resistant to brown-rot or Manilia than either the Red June or Abundance, neither of which can be classed as reliably profitable.

Another fine variety, and the only one hailing from the Pacific Coast that is not readily susceptible to the destructive brown-rot here, is the America, a hybrid, in which is fused with the Japanese some of the native Chickasaw characteristics. The fruit is large, notably globular in form, and until nearly full maturity the skin is a rather bright yellow, but turns to an attractive light red; ripens just before the Chabot. Tree rather spreading in form, vigorous in growth, and very productive.

With varieties as briefly outlined in the foregoing, followed by the care and treatment necessary to grow any other fruit successfully or profitably, there is not a particle of doubt as to plums. Of course, there are many other kinds in addition to those named above, that can be grown anywhere in Pennsylvania that peaches or cherries can, with varying degrees of success and profit, but the varieties here chosen are the most dependable and reliable.

HORSE RADISH ON A NEW JERSEY FARM.

HORSE RADISH FOR PROFIT

Horse radish growing has been a source of profit for the market gardener (as well as for the farmer who grows it on a larger scale) for a number of years. For the aid of the inexperienced gardener, the following suggestions relating to its planting, culture and harvesting have been collected.

There are two kinds of horse radish—the Malener Kren or Bohemian, and the Old Fashioned. The Malener Kren gets its popularity from the fact that it matures quickly, but on the whole, there is not much difference in the two varieties.

Horse radish is propagated by roots, as it grows no seed. Roots that measure more than one-third of an inch in diameter should be selected. Take a sharp knife and cut the top of the root squarely off. By cutting them in this way it is easy to plant them straight. Some growers take a stiff brush and scrape the little roots from the side of the plant or set, but this is impractical, as they grow again and as it is thru them that the plant receives nourishment. They are also of value, for they are used for the next year's planting. Ready sale can be found for them at $3 per thousand.

Low, rich land should be selected for the cultivation of horse radish, as moisture is very essential. It was first found in the lowlands of western Europe, and altho it thrives best in good ground, it will grow almost anywhere, because it is free from disease, blight or insects. Horse radish should be grown as large as possible to sell readily. Therefore care should be used in selection of soil and in the free use of manure and fertilizer. Either raw or slaked lime is excellent, especially on low, sour ground. Sifted coal ashes are good as fertilizers. Specimens planted in coal ashes and at the same distance apart as cabbage have grown until they weighed four pounds to the hill.

The ground should be plowed in the fall and covered with thoroly decomposed manure which will soak in during the winter. Horse radish can be planted in the fall (as cold will not hurt it) but the freezing and thawing of the ground will expose the roots to the weather and cause them to rot. Better results can be obtained by planting it in the spring, when the weather is warm and favorable. Some gardeners claim that an acre will hold 10,000 or 15,000 sets, but that is too close. Five thousand hills to the acre is about right for good cultivation. If they are planted too close together, a solid mass of foliage results, thru which the sun and air can not penetrate and only small roots mature. Horse radish should be planted in rows about four feet apart and two feet between the plants. It is planted with a pointed stick or a narrow hoe, being careful to cover with at least two inches of dirt, so that the rain will not wash it out, and also to make room for the crown to form. The radish should be planted on a ridge about six inches high.

Cultivate it carefully and frequently, as no crop responds to extra attention more quickly than horse radish. The value of horse radish as a crop is underestimated. Cultivate it about once a week with a harrow, and be careful not to hoe too deep in August, as the roots grow near the surface at that time. The tops grow first and form a crown. During October the leaves die down and the sap runs to the roots, at which time the roots develop rapidly. Cultivation should be stopped when the leaves are about two feet high.

When ready to harvest plow it up with a two horse plow. Be careful to go deep enough to get all the small roots. Then take drags and shake the dirt from it and throw into windrows. Cart to a barn or wherever you wish to clean it. Break off the small roots and cut off the tops. It is best washed by turning a hose on it and allowing it to drain thru small chicken wire. The radish should not be allowed to lay over one year in the ground, for in the second year it is very apt to get false hearts and rot. It will grow large enough the first year. If the radish does not have to be used at once, it can be dug when needed. Strange as it may seem, horse radish will grow during the winter. Thru careful experiment it has been found that a row left over winter will weigh several pounds more than an adjoining row dug in the fall.

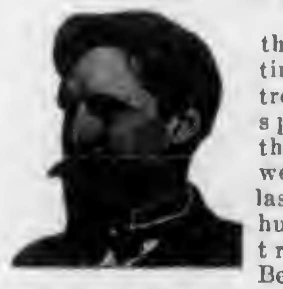
There is a big demand for horse radish. Pickling establishments pay $80 per ton for it. It is used as a condiment and as a cure for colds. Everyone relishes it with oysters, meats, sauces, etc. With proper care and attention it attains the weight of four pounds to a single hill, or a field may average two pounds to the hill. Valued at eight cents to a hill, 5,000 hills make $400, or about $250 profit to the acre. Thus it is much more valuable as a crop than potatoes, and you are sure of a good crop every year.

Horse radish culture should be, and is, a good crop for the gardener and farmer for the following reasons: (1) easily planted and cultivated; (2) not subject to disease, blight or insects; (3) can be gathered whenever needed and is not hurt by frost; (4) most important of all, it is a staple crop, has a ready market and brings exceptionally good prices.—Charles Richards, Gloucester Co., N. J.

Horticultural Queries.

(Conducted by Prof. H. A. Surface, State Economic Zoologist. Address all queries to Pennsylvania Farmer, Philadelphia, Pa.)

Fall or Spring Planting



When do you think is the best time to plant apple trees, in the fall or spring? Do you think such cold weather as we had last winter would hurt fall planted trees?—D. C. W., Berks Co., Pa.

I planted several apple and peach trees last fall and a great many more this spring, and the fall-planted trees of both kinds lived and grew better than did the spring planted. I did not lose one-tenth as many fall-planted trees as of those planted in the spring. If fall planted trees are planted as deeply as they should be, which means two or three inches deeper than they grew in the nursery, and are then mounded with a mound of earth a foot higher than the level of the soil and are pruned back fairly well at the time of planting, they should come thru the winter in good condition. In the spring the mound of earth can be broken down with a hoe and, of course, the trees should be cultivated then.

BIRDS AS DESTROYERS OF INSECTS

Officials of the Biological Survey of the Department of Agriculture estimate that 20 percent of the average annual crops of the country is destroyed by insects. Away back as far as 1904 it was found that the damage done thru the ravages of insects amounted to $420,000,000. This is a direct loss to the nation, and one which must have a very appreciable effect in determining the price of products. The farmer must depend on the birds more than any other agency to eliminate this loss, yet the bird slaughter continues. The destruction of insectivorous birds is of special concern to many sections of the country, because of extensive fruit-growing. As the destroyers of insects, birds have come to be recognized as agents for conserving national wealth. The killing of a bird indirectly is a contribution to the strength of the insect horde which infest the vegetable products.

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Laying the Foundation for a Profitable Dairy Herd

By LEON O. VAN NOY, Bradford Co., Pa.

In laying the ground work for a dairy herd, I believe it is best to begin with oneself. Those of us who have been born on dairy farms do not always appreciate the "Dairy Cow." About the first thing we remember is the cows getting into the corn field or clover patch, and our services being enlisted to get them back into the pasture. And this early experience does not always stimulate in us any great desire to become dairymen in the future. But we must learn to love the business before we start the foundation, for if we do not it will totter and tumble long before we have the herd completed. And how to learn to understand a business that requires constant attention for 366 days in the year (there is no leap year for the dairy man and he has a hard time finding help to carry on the work because the cows do not observe Sundays and holidays) is one of the questions we have to solve.

makes for reasons of their own. But the kind of a farm machine that I am to write about is still in the hands of the farmer, and it is in his power to create new ones and improve them. Some claim one breed is best for a certain purpose, and some another. I am not going to pick out any breed or certain strain of breeding and say it is best. We all differ in this respect, and I am glad that we do. But I can say to the young man who has not yet started in the business, and who has all his foundation material to select, to first find out which he is to produce, milk or butter, and do not consider for a moment any breed that has a tendency to beef. There is without question a dual purpose breed, but there is no such thing as a dual purpose strain in that breed.

Now study the history of these different breeds, and find out which has been bred under conditions similar to the ones that you have. Write to the different cattle clubs and get their literature; study it and compare them one with the other. Look the different breeds over and see which is the most pleasing to the eye, and so on. Look up the feeding records and see if they produce a pound of butter or a gallon of milk economically. Now purchase a purebred sire, the best you can find within the limit of your means. Do not try to economize on the sire, because he is already half of the herd, and when mated to high grades along the same line of breeding, the first cross will often produce an offspring that will contain three-fourths of the blood of the male. Then buy two or three purebred cows, and if paying a fancy price for them, be sure that there is not a cow in the pedigree that has not produced at least 300 pounds of butter in a year for six generations back. When buying such a cow the owner should give his permission to go to the stable and milk the cow, take a sample of the milk and test it with the Babcock tester, and then you can form an idea of what you are getting for the foundation. Any man that is in the business of breeding good, pure cows will give this permission. If he refused, I would not care for any of his stock.

SIXTEEN-YEAR-OLD HOLSTEIN MATRON ON HOME FARM, Lehigh Co., Pa.

I believe that there is no question but that the dairy cow has done more to raise the mortgage than any other animal we keep. According to statistics, there are approximately 22,000,000 dairy cows in the United States, and they are valued at about $700,000,000. The State of Pennsylvania alone has over 1,000,000 cows, and their value is about $41,500,000. Pennsylvania ranks fifth as a dairy state. Those preceding her are New York, Iowa, Illinois and Wisconsin. So we have a great value in the "Dairy Cow."

We might say that we have a great value in a number of very valuable machines—very valuable for what? For the purpose of converting raw materials into a more concentrated and valuable product. Man has made many machines that are a great aid to his fellow men, and these at first were very crude; but genius after genius has improved them until now they are mechanical wonders. But in order to be a success to the one that uses them, they must have a skillful operator. So it is with the dairy machine. In the beginning, Nature gave us a machine that was capable of producing milk, and man in generation after generation has improved it, until now it also is a mechanical wonder, and in order to be a success to the man that uses them, they must be managed by a skillful operator.

Now, I like this way of looking at a dairy cow as a machine. Machinery is a hobby that I ride. It is said that we all have hobbies. Now, how shall we select this dairy machine? Up to within the last few years we have had a number of different makes of farm machinery to select from, but the corporations are eliminating a number of

Now, if we have not the means to buy these purebred cows, the next best thing to do is to buy two or three purebred heifers with a pedigree as good as I outlined for the cows, and ones that have made a good thrifty growth for their age. The rest of the herd may be composed of grades coming as near the ideal as possible. We must have an ideal—something to build up to—for by this time we have decided which we are to produce, milk or butter. Every dairyman must find this ideal for himself, and here is where each has a chance to show his individuality. Without this we would run wild, and in a short time this foundation that we are trying to build up would be ruined. Then after you have the foundation completed do not let anyone convince you that they have a better breed for your purpose and persuade you to change. Life is too short to build up more than one good dairy herd, and this can only be done by selecting the best of the offspring from year to year and introducing new blood, by purchasing the best sires that money can buy.

Some of us have the foundation already laid, but when we figure out the profits at the end of the year, we find that they have not paid us good wages and made a living for the family. The farmer that carries on a specialty or general farming and does not keep an account, so that he can tell at the end of each month what his gains or losses are, does not deserve success any more than a banker who would carry on a banking business without a cashier. In order to find the poor material in our herd, we must test each individual machine in the herd. The best means for doing this is the milk scales and the Babcock tester. It is often said that anyone can run the Babcock test, and I think this is true. But my experience is that a good many dairymen do not take the time to do it right. I will not try to discuss the Babcock test in this article.

ECONOMICAL COW FEEDING

The good cow is the keystone of profitable dairying, and upon maternity depends her usefulness. A maximum degree of bodily thrift and functional activity must be maintained constantly and at the minimum cost of feed and labor. The wise dairyman asks himself, first, what crop or crops can I grow on my own land to benefit the soil, to save outlay of cash for mill-feeds, to nourish the cow and get the result at the pail?

His first concern is the scheme of cropping that will feed the dairy and at the same time feed the farm. This surely involves the production of the maximum crop of corn for ensilage and affording succulence and palatability in the roughage. Then comes the running mate of the silo—a field of alfalfa, with its ability to furnish three to four tons per acre of hay, strong in food value, nearly equal to wheat bran and costing less than half the money. With good corn ensilage, alfalfa hay and a little supply of common clover hay and meadow hay, the dairyman need not lie awake nights studying how to cut down the feed store bill. He has already eliminated half that bill.

With the above roughage we would use cottonseed meal, oil meal, dried brewers' grains, and with this combination, cob meal, buckwheat middlings, etc., can be used, substituting part of the cottonseed meal. However, cottonseed meal and oil meal at present prices have a proper place in the ration. The cottonseed meal adds very materially to the manureal value of the ration. Variety has virtue when it is so easy to secure, and a fair degree of bulk in the grains is also desirable, as in the use of a feed such as dried brewers' grains, bran or ajax flakes.—D. H. Watts, Clearfield Co., Pa.

Dairy Ration.—I have three kinds of grain to feed my cows, corn and cob meal, dried brewers' grains and cottonseed meal. How much should I feed? My cows are about the average in amount and quality of milk they give. A. B. M., Chester Co., Pa.—One of the best general rules for making up dairy rations is to mix the grain to give a nutritive ratio of about 1 to 4, and feed about 1 pound of this grain mixture per day for every 3 or 4 pounds of milk given. With the grains named, mix 4 parts corn and cob meal, 2 parts dried brewers' grain and 1 part cottonseed meal. Then feed each cow according to her production, giving a pound of grain to each 3 or 4 pounds of milk produced.

Clover Hulling.—The increased cost of clover and alfalfa seed in recent years has shown the advisability of farmers growing their own seed. The cost is cheapened, better seed may be secured and there is no delay incident to shortage of supply. "Hulling Clover and Alfalfa" is the title of an attractive catalog now being distributed by the M. Rumely Co., La Porte, Ind. It gives valuable information on this important work and describes the famous Rumely line of hullers. It will be sent free if you write for it, at the above address, mentioning Pennsylvania Farmer.

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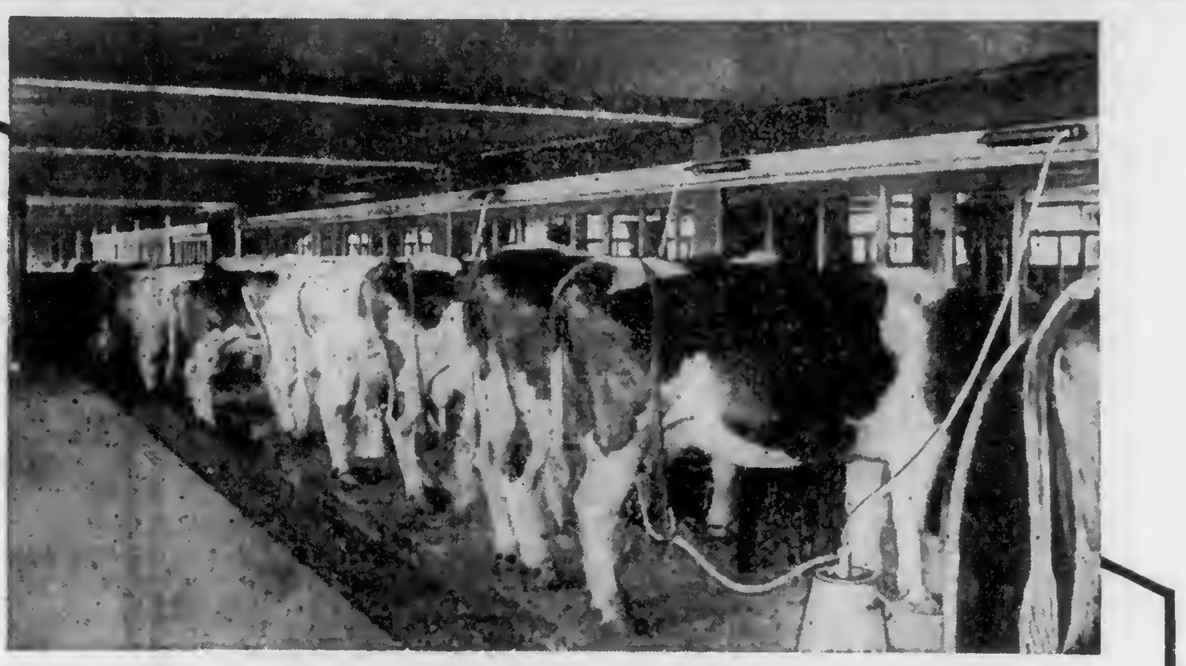

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Poultry

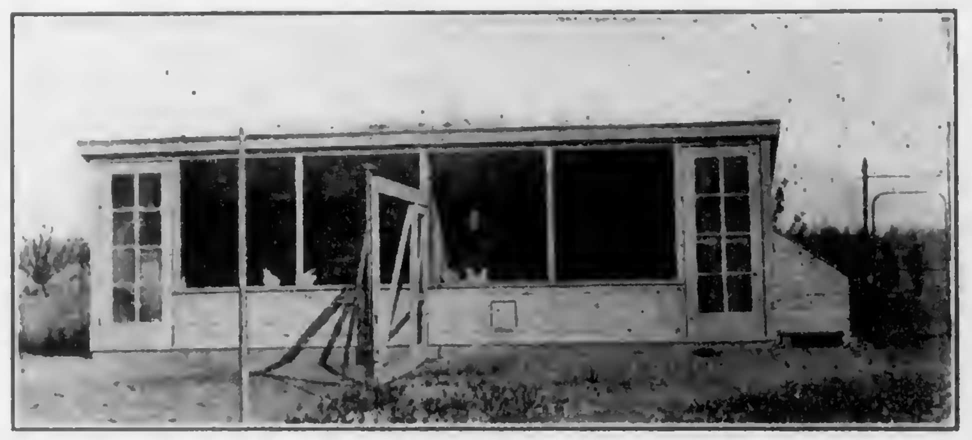
RATIONS FOR LAYING HENS

Some time ago I had the pleasure of visiting several large successful poultry plants. I took a note of each farm's methods of feeding. No two were alike, but each had brought the user very satisfactory results. I have selected five of these methods, together with the constituents of the grain and mash mixtures and methods of feeding. You will note that all used the dry hopper system of feeding mash mixtures, which I think is more satisfactory on large plants.

Method No. 1

Grain Mixture—	Pounds.
Cracked corn	100
Wheat	100
Oats	100
Mash Mixture—	
Bran	100
Linseed meal	50
Corn meal	50
Middlings	50
Beef scraps	50
Charcoal	2
Salt	2

For the morning feed, each pen of 40 fowls receives two quarts of the grain mixture, well scattered in a deep litter. Between eight and nine o'clock from three to five pounds of cabbage is given to each pen. At noon the grain mixture is repeated. This constitutes all the feeding that is done by hand. The dry mash mixture, grit and oyster shell are kept in hoppers.



OPEN FRONT POULTRY HOUSE.

Method No. 2

Grain Mixture—

Wheat screenings and corn, equal parts

Mash Mixture—	
Wheat	1 bushel
Bran	2 bushels
Beef scraps	½ peck

4 teaspoonfuls ginger and cayenne pepper are mixed to every bushel of mash.

In the morning the fowls receive a feed of wheat screenings, well scattered in the litter, and on alternate mornings cabbage and ear corn are hung up in the pen. A liberal feed of shelled corn is given at night. The dry mash mixture, beef scraps, grit and oyster shell are kept in hoppers.

Method No. 3

Grain Mixture—	Pounds.
Wheat	100
Corn	100
Barley	100
Oats	100
Buckwheat	100
Kaffir corn	100
Mash Mixture—	
Model egg-mash	100
Wheat bran	100
Beef scraps	100
Charcoal and salt	5

The hens on this farm are kept in flocks of 1,000, and both grain and mash are hopper-fed. The fowls are well supplied with grit, oyster shell and charcoal. The green feed is made by sprouting oats and allowing them to grow until they resemble a thick mat of green grass; this is kept before them all the time. During the molting season linseed meal is added to the mash; sunflower seed is also fed liberally.

Method No. 4

Grain Mixture—	
Corn	½ bushel
Wheat	½ bushel..
Mash Mixture—	Pounds.
Bran	200
Middlings	100
Gluten meal	100
Linseed meal	100
Beef scraps	100
Oatmeal	100

The morning feed is the grain mixture scattered in the litter, about one quart to 20 fowls. At 9.30 mangel beets are given as a green food. The evening feed is given at 3.30, and consists of grain, as in the morning. The mash mixture, grit, oyster shells, charcoal and bone are kept in hoppers.

Method No. 5

Grain Mixture—	Pounds.
Wheat	20
Corn	40
Oats	10
Mash Mixture—	
Bran	100
Corn meal	100
Beef scraps	100
Charcoal	8

With this system of feeding laying hens the plan is to give half as much more of the grain mixture in the morning as at night. The amount of grain fed is regulated by the quantity of dry mash consumed, the aim being to feed twice as much of the former as of the latter. The grain is fed in the litter, or in favorable weather scattered broadcast in the runs. The dry mash mixture, grit, oyster shells and cracked bone, as in the other methods, are kept in hoppers for the use of the fowls at any time. During the winter months about 2 percent more corn and 2 percent less wheat is fed. For green food beets, cut clover hay or alfalfa is furnished on alternate days, allowing about two pounds of clover or alfalfa to every 100 hens. Beginning in August, 3 percent of oilmeal is added to the daily ration, for the purpose of encouraging and hastening the molt.

These methods of feeding laying hens have proved very satisfactory with the owners, both as to egg-production and general health of the fowls.—A. E. Vandervort, Delaware Co., N. Y.

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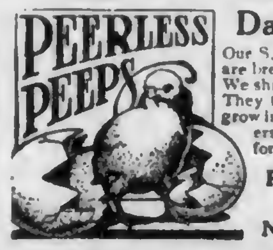

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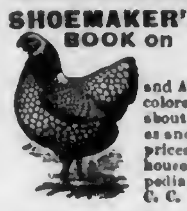

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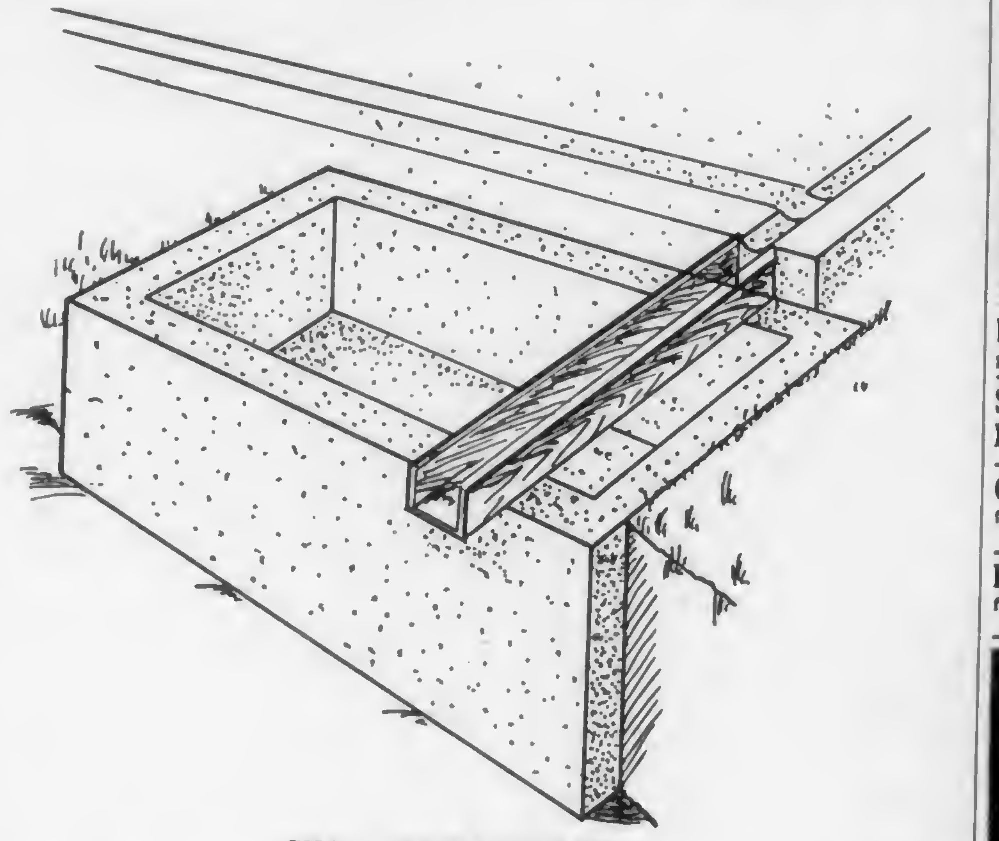
Live Stock

SHALLOW MANURE PITS

The following is description of the building of a shallow manure pit, as illustrated in Farmers' Bulletin 481. These shallow pits are satisfactory in connection with concrete feeding floors or stables, and where the manure can be hauled to the fields frequently. The walls and floors are 5 inches thick. The clear dimensions of the pit, as illustrated, are: Depth, 3 feet; width, 6 feet; length, 12 feet. The trench should be dug 3 feet 5 inches by 6 feet 10 inches by 12 feet 10 inches.

SHEEP ON PASTURE AT OVERBROOK FARM, MONTGOMERY CO., PA.

By keeping the sides vertical, only an inside form will be needed. Frame the sides and ends separately. For the sides cut the 1-inch siding 12 feet long and nail it to four 2x4-inch uprights, 3 feet long and equally spaced. The end uprights for the sides are 2x4 inch pieces nailed flat to the siding; the others are also 2x4, but are nailed on edge. It is not necessary to cut these uprights to exact lengths; they may be allowed to extend above the siding. Make the siding for the end section of the form 5 feet 2 inches long and at the ends nail it to the edge of two 2x4-inch uprights. Place a single 2x4 upright between each end pair. Cut four cross braces, 5 to 10 inches long, from 2x4-inch timbers. Have enough sections of woven-wire fencing, 7½ feet long, to cover the bottom of the pit.



SHALLOW MANURE PIT.

Mix the concrete at the rate of 1 part Portland cement to 2 of sand to 4 of sharp gravel or crushed rock. Crosswise of the floor, tamp in a section of concrete (not too wet) 2 inches thick and a little wider than the strip of woven-wire fencing used as reinforcing. Lay the wire in with an even division of the extra length, so that it may project upward into the side walls. Tamp in the upper layer of 3 inches of concrete. No facing mortar is needed.

Set up the forms on the finished floor immediately, and in such a way as to allow a 5-inch wall on all sides. Join them by nailing together the 2x4's at the corners of the sides and ends. Do not drive the nails home. Cross-brace with 2x4's and with 1-inch boards from each central end upright to the second side upright.

Quickly begin filling the forms with concrete almost wet enough to pour, and keep it practically the same hight on all sides. Puddle the concrete by running a long paddle up and down next to the form. Do not punch the earthen wall. Dirt in the concrete may make a poor wall. If the top of the earthen wall tends to crumble, hold it back with boards braced against the forms. Remove the forms after the concrete has set four days by first drawing the nails in the corner 2x4's. The pit may be used after 10 days.

The trough shown extending across the pit in the illustration is to be used to convey excess water over the pit. The natural moisture from the stable or feeding floor would be conducted directly to the pit by means of gutters.

MAST FOR HOGS

Last spring we had two purebred Chester White sows farrow on March 12 and 13, respectively. They had very good treatment until the pigs were eight weeks old. Then all but two of the pigs were sold for breeding purposes. The ones sold weighed from 30 to 32 pounds each. The smallest pig in each litter was left on our hands. They were weaned and then turned out with the other hogs. They would probably have weighed 25 pounds each when the others were sold. All of the hogs were allowed to depend almost entirely upon the range for a living. They were fed a few apples during the summer. When fall came there were a few acorns and a heavy crop of beechnuts, so the hogs got the benefit of these. I did not feed my fattening hogs any corn this fall, and they are all fat. I killed the cull pig, farrowed March 13, on December 3, and it dressed 95 pounds. The other one would dress more than 100 pounds. I kept an account of the feed bill while the pigs were sucking the sows, and it averaged $1.20 for each pig.

The pigs I sold brought me $5 and $6 each, but I am wondering whether I would not have made more clear money to have kept them and allowed them to gather the mast. The great trouble is that some years the mast crop is good while it is an entire failure at other times.—A. J. Legg, Nicholas Co., W. Va.

Kindig Spavin Cure Makes Change.—The many users of the old reliable Kindig Spavin Cure will note that the price of this remedy has recently been advanced from 50 cents to $1 per box. This does not mean an advance in price, but merely a change in shipping package from a small to a larger size. Because of a change in postal regulations it became necessary to send such packages by express and the quantity per package has been increased. Instead of buying the old-sized box for 50 cents, patrons can now get more than twice the old quantity in the new $1 boxes. The 50-cent sizes are still sold by local dealers, the new size being used only for orders by mail. The mail purchaser gains by the change. Full particulars may be obtained by addressing the Eli Kindig, Jr., Remedy Co., 4825 Woodland Ave., Philadelphia, Pa.

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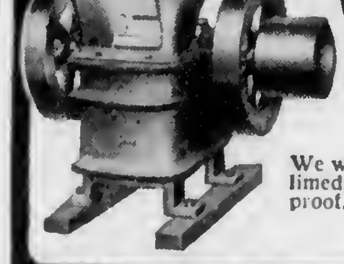

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Established 1880. Published Every Saturday.
Entered as second-class matter at the postoffice at Philadelphia, Penna.

The Lawrence Publishing Co., Proprietors
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214-216-218 South 12th St., Philadelphia, Pa.

Branch Offices For Advertising Only
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TERMS OF SUBSCRIPTION

One Year	52	copies to one person	$0.50
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Five Years	260	" " " "	$2.00

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Philadelphia, Pa., January 18, 1913.

LEGISLATIVE REFORM

The state legislature, in its organization on January 7, started the first great reform movement of the session. In overthrowing the old rules of procedure and the old system of committee appointments, the house not only responded to a widespread popular demand, but it opened the way for unhampered representative action during the remainder of the session. The old code of rules was the outgrowth of many years of political manipulation, in which machinery was built up to more completely control the actions of members. Bills were handled in committees and on the floor very much as the manipulators wished, and it was almost impossible to push a bill thru against the wishes of the men in power. The present house voted to do away with this condition. The old rules were overthrown and a ''committee on committees'' appointed to draft new rules to be submitted when the legislature reassembles on January 20. The senate was more conservative. It re-adopted its rules of the last session ''until they are superseded.'' There was nothing in the proceedings to indicate that the present membership of the senate desires to have these rules superseded, but they were never so arbitrary and opposed to free action as those of the house, and they can not be held responsible for reactionary methods in the senate, even if left in their present form. The stand of the house promises well for the coming session, and now that they are on a good working basis, the people have the right to expect further needed reforms.

COLLEGE TRAINING

The growth of the Pennsylvania State College has been very great during the past 10 years. Year by year, more men are fitting themselves for agricultural work by college training, and the natural queries which follow are, when will it be overdone, and how many of these men actually engage in agricultural work after they have spent four years in preparation? The Pennsylvania State College is not alone in this rapid and recent growth; other agricultural colleges have increased in the same proportion, and all are enjoying what apparently is a crest of an agricultural wave. However, when we analyze this movement, we can see that it is the result of certain causes, following other wider developments, and is natural and permanent. During the last 10 years there have been many progressive changes in the agricultural work of the country. Rural free delivery, better roads, telephones, labor-saving machinery and many other devices have come to take away the burden of farm life and to put it upon the plane of a profession rather than an occupation. More than this, the experiment stations have carried their work far enough to enable the farmer to solve his problems from a scientific standpoint. They have given him knowledge to improve the fertility of his soil, to know the value of cover crops and commercial fertilizers, and they have put at his disposal the means of fighting the many insect and fungus enemies which formerly threatened to wreck his business. All of these changes have been followed by a general rural uplift, and have not only improved living conditions, but have increased prices. It was this last point more than any one other which sent the boy to college to fit himself in the best possible manner for intelligent agricultural work. It is interesting to note what these college-made farmers have done, and how many of them have kept to their job. From one agricultural college there have been graduated 996 men during the last 50 years, of whom 877 are still living. Of this number, 27 percent are farmers, 9 percent are connected with agricultural colleges, 5 percent with the department at Washington, and 20 percent are engaged in other lines, such as teaching agriculture, landscape gardening, cheese manufacturing, etc. Thus, over 60 percent of these men are now in agricultural work. But in order to make the figures applicable to the last few years, we will take only those covering from 1906 to 1910, inclusive. Of these men, 86 percent are engaged in active agricultural work, against 14 percent in other lines. Not only is the number of these men increasing, but the positions open to them are greater than ever before and carry with them salaries which call for the best trained men. The majority of the graduates go out on the farms and engage in farming as a livelihood. It is impossible to get accurate data showing the earning capacity of these men. But the salaries of the men in other agricultural lines are at hand, and must be closely parallel to the farmer's earnings or else the farms would be deserted. In 1907 the average salary of 92 graduates who accepted agricultural positions, such as teachers or experimental investigators, was $928; in 1908 the average for 79 was $915; in 1909, for 93 graduates, was $955; in 1910, for 95 graduates, was $1,017; and in 1911, 134 graduates averaged $987. The lowest salary among the 1911 men was $500 and the highest, $1,600. When we consider that about 20 years ago the agricultural graduate could not hope for $1,000 ($500 was the average), we can see that agriculture has risen to a profession, calling for trained scientific men to carry on the work of further progress.

COUNTY DEMONSTRATORS

The article on the first page of this issue describes the work which is being done in inaugurating the county farm agent or demonstrator system. This work has proved very popular where it has been tried out, and it holds out wonderful possibilities if the right sort of agents are secured and the right kind of demonstrating done. These agents must first demonstrate their own ability to advise before they can expect the farmers to accept them and their service. The farmer who has become familiar with his soil problems and conditions thru long years of hard work has a right to be cautious in the use of new methods and new ideas. What has been learned thru hard experience is not lightly thrown aside, especially when the value and return of the savings of a lifetime are at stake. The farm agent system is a new idea in state and Federal service to agriculture, and like all new things it must expect to prove its worth before it can reach its full measure of usefulness.

GOVERNOR'S MESSAGE

An encouraging promise of constructive legislation is found in the Governor's biennial message, submitted to the state legislature, January 7. While not endorsing the full progressive program pledged in the platforms of the three parties represented in the legislature, the Governor does outline a program which may be termed as conservatively progressive. He takes an unqualified stand in favor of such issues as look to better control of financial interests in their relation to labor and the public. He makes several recommendations favoring a better system of state government and a corresponding saving in state expenditures. He favors a liberal policy in state support of agricultural interests. But he balks at the purely popular issues, or those which would tend to bring the state and federal governments closer to the people. His progressive program calls for nomination and election of municipal and county officials, particularly judicial officers, on a non-partisan basis; passage of a comprehensive and effective public utilities law; abolishing the office of Internal Affairs, and transferring its duties to a Public Utilities Commission and the Department of Factory Inspection; enactment of a workman's compensation bill, especially to regulate the employment of women and children; creating a Department of Labor and Industry to enforce state protection of labor; enactment of a law providing for classified direct inheritance tax; demanding license from social clubs selling liquor, and enforcing state laws governing closing hours with such clubs; regulation of stock issues; state control of dams, and referendum on woman suffrage. Among the so-called popular laws which he does not recommend, some of which he does not mention, are direct primaries; the initiative and referendum; effective corrupt practices act, and state adoption of Federal constitutional amendment providing for direct election of United States Senators. Among the items of direct interest to agriculture, the message recommends appointment of two delegates to represent the state on the national commission to study foreign systems of rural credits and agricultural finance; adoption of constitutional amendment on good roads; liberal appropriations for continuance of forestry work, and deferring taxes on timber to be paid when timber is taken off land; liberal support of the state agricultural college and experiment station; creation of a commission to make recommendations on the establishment of a state fair, and continuance of the Chestnut-tree Blight Commission for another period of two years. With the exception of the endorsement of the good roads amendment, and possibly some question as to the chestnut blight work, these agricultural recommendations are likely to meet with general favor among the farmers. Among the popular demands not recommended, the direct election of United States Senators will be the most disappointing. There is a general demand that Pennsylvania get into line in favor of this amendment. On the whole, the Governor's message is in line with the evident purpose of the legislature, as shown in its organization, to get away from political manipulation and meet public demands with some much-needed reforms.

PROSPECTIVE AGRICULTURAL AND RURAL LEGISLATION FOR 1913

Pennsylvania's legislature, which took a recess on January 7 after completing its organization, will begin work in earnest on the night of Monday, January 20, when the committees will be announced and presentation of bills will follow. Not in recent years have the prospects favored introduction of so much legislation. The Legislative Reference Bureau has been working day and night on drafts of bills, and many members and committees will offer measures.

This year the agricultural and allied interests have formed a general committee to agree upon legislation, so that the various organizations may pull together. While they have not announced their program, and some details are to be arranged at a meeting this month, the following are some of the measures which will be brought to the attention of the law makers as affecting rural interests:

General Agricultural. — Appropriations in aid of practical advice and assistance to farmers by agricultural experts; for enforcement of the law to compel sales of pure linseed oil, paris green and fertilizers; extension of the work of supervising cattle feeds; aid for soil surveys; requiring all packages of seeds to be branded and punish adulteration of seeds.

Educational.—Special appropriations in aid of districts which are unable to afford the full school term; state aid for paying minimum salaries for minimum term for teachers; pensions for teachers after a certain period of service; aid for extension of agricultural and vocational education, and extension of farmers' institute work and movable schools.

Rural Life.—Creation of rural life commission, consisting of a farmer, fruit grower, banker, transportation man and merchant to study rural life conditions and sanitation; improvement of rural housing conditions and rural school houses; regulation of telephone charges in rural districts and prohibition of trolley lines on state highways.

Highways.—State aid for townships in construction of roads, and larger share of cash for abolition of work tax with state aid for bridges.

Inspection Work.—Appropriation sufficient to enable every orchard in Pennsylvania to be inspected once a year, with authority to enforce removal of infected trees or parts thereof; continuation of Chestnut-tree Blight Commission and defining its authority in removal of trees; appropriation to enable systematic inspection of bees; extension of medical inspection to all school districts of the state.

Recognition.—State recognition and appropriation in aid of work of State Bee Keepers' Association and State Poultry Association, the older agricultural organizations having recognition to extent of $2,000 a year.

Fire Marshal.—Establishment of a uniform policy for all fire insurance; requiring applicants for insurance to give previous insurance, and providing for adequate reports on all fires and co-operation of local authorities in tracing incendiaries.

Forestry.—Appropriation of $200,000 for additional state forestry reserves; establishment of nurseries for free distribution of trees for planting at low rates, and creation of auxiliary forests where timber is to be grown and cut under state supervision in return for low tax rate.

Dairy and Meat Inspection.—Extension of dairy inspection so that all dairies may be visited within a specified time, and authority to compel abatement of nuisances; extension of meat inspection to rural districts.

Pure Food.—Prohibition of any adulterants or preservatives in foods; standardizing of condensed milk; requiring all rotten eggs to be treated

ith coal oil before being sold, and equiring all cold storage products to e marked.

Game Laws.—Providing $50,000 for ayment of bounties on foxes, wild ats, mink and weasels; extending rotection thruout the year to killdeer, urtle doves and blackbirds; appropriaons for increase of game wardens as uthorized by law; prohibiting the sale f game, except rabbits.

Live Stock.—Increasing rates to be aid for animals slaughtered because f disease, and enlarging State Live tock Sanitary Board so that it will epresent various interests; providing r closer inspection work and encourgement of horse breeding.

Water Companies.—Complete survey f all water resources in the state, and ate control with a system of leases r water rights; restriction of rights f companies now exercising emident omain; state regulation of all dams.

Rural Police. — Enlargement of ate police force, so that a certain ortion of men can always be engaged n patrol duty in rural districts.

It is probable that bills to require ll hunters to pay a license will be preented, and others to devise a system of ural credits. It is also proposed to sk for return of a larger share of pernal property tax to counties; for reurn to cities, boroughs and townships f shares of taxes raised therein from ublic utility corporations, and for reurn to municipalities, townships and chool districts of money paid as state x on bonds.

The committees on agriculture, highays and other subjects pertaining to ural life will be composed of men conersant with conditions, this being one f the announced policies of the comittees in charge which have asked embers for statements as to occupaion and preferences as to legislative ork. — Hamilton, Harrisburg, Janury 13.

NEW JERSEY AGRICULTURAL MEETING

The fortieth annual meeting of the ew Jersey State Board of Agriculure was held in Trenton, N. J., Janury 7th to 10th. The feature of the eeting this year was the display of gricultural products of all kinds. A umber of the New Jersey exhibits at he recent Land Show in New York ity had been transferred to Trenton, nd attracted considerable attention. hree large silver loving cups which he state won for the best 30 ears of eld corn, best sweet potatoes and the est dozen brown eggs had a conspicuus place on the platform.

There was a large display of vegeables and cereals, especially corn from he county associations, boys' clubs and ranges. The 30 ears of Improved eid's Dent Corn which won the New ork cup, were exhibited in a glass ase, and caused much favorable comment. The prize sweet potatoes, for hich South Jersey is famous, were raded and packed in boxes the same as pples. The prize winning eggs were hown with 20 dozen other choice eggs pread over green sawdust, so each howed to advantage.

Attractive and instructive displays ere made by the Dairy, Seed Testing, ee Culture, Horticultural, Plant Pathlogy and Poultry Departments of the ew Jersey Experiment Station. The tate Department of Weights and easures had a silent monument to the ishonesty of numerous dealers and erchants in a collection of about 1,000 hort quart baskets, dented measures, alse-bottom cans and untrue scales.

Using the slogan, ''Two million forst acres in New Jersey for use or for buse,'' the State Forestry Commission ad an extensive display. The products f the forest, from bean poles to raiload ties, were on exhibition, and exerts were on hand to answer all quesions and give information. Special atention was given to the utilization of hestnut timber on account of the ravges of the chestnut blight. The daner and damage from forest fires and he ways to prevent and combat them ere graphically presented. Injurious nsects, ways to control them, and the arious tools used by foresters were hown in a log cabin, 12 by 20 feet quare, which had been erected in one orner of the hall.

Nine sessions of the Board of Agriulture were held, each one dealing ith a different phase of agricultural ctivity. In his annual address, the resident of the board, Hon. Joseph S. relinghuysen, referred in no uncertain terms to the fact that 20,000 automobiles from outside the state, and which pay no state tax, are tearing up the state roads and the farmers are overtaxed to keep them in repair. Mr. Frelinghuysen favors a total state automobile tax sufficient to pay 80 percent of the repair bill for the roads. He also favored convict labor on the roads and Federal aid for farmers.

A number of notable speakers from outside the state were present. Prof. Philip B. Hadley, Biologist of the Rhode Island Station, spoke on ''Diseases of Poultry.'' Dr. C. E. Thorne, Director of the Ohio Station, treated ''Soil Fertility.'' ''Inter-relations of Crops, Fertilizers and Soils,'' was discussed by Dr. H. J. Wheeler, of Kingston, R. I. Dr. George M. Twitchell, of Maine, spoke at two sessions on 'Potato Production From Experience'' and ''The Business End of the Milk Pail.'' ''The Tuberculin Test and the Use of Slightly Affected Tubercular Animals for Human Food,'' was ably handled by Dr. B.T. Woodward, of the Bureau of Animal Industry. Prof. H. E. Van Norman, of the Penn State College, gave an excellent talk on ''Scientific Feeding of Dairy Cattle Simplified.'' ''What the Weather Bureau Means to the Farmer'' was explained by Prof. Willis L. Moore, Chief of that Bureau at Washington.

NEW YORK FARM NEWS

Norris to Be Honored.—It will give the thousands of grangers in New York State great satisfaction if Governor Sulzer appoints Hon. E. B. Norris, of Wayne County, to the State Fair Commission, as now seems probable. Mr. Norris was master of the State Grange for several years, is a large fruit grower and a man well qualified for the position named. The salary of commissioner is $3,000 a year and expenses, and the term is three years.

Governor Sulzer Busy. — Governor Sulzer had not been in office two days before he let it be known in no unmistakable terms that he was intending to reduce the cost of running the state government very materially. He also proposes to investigate, as Governor Hughes never dreamed of doing, several of the state departments, as he believes there is too much money wasted in their administration. He will probably consolidate the two public service commissions and will put the highway commission on a different working basis. Politicians are saying, ''What next?''

Score Fair Managers.—The Holstein-Friesian breeders' club, at its recent meeting in Syracuse, told the state fair managers what they thought about their rules and regulations relating to the exhibition of cattle at the state fair. They called the prices charged for feed for cattle ''outrageous,'' objected to the policy of reducing passes for helpers to ''an awkward limit,'' and said that a concise statement of their side of the case would be formally made to the state fair commission. There was a difference of opinion as to the value and future necessity for Holstein breeders to exhibit their cattle at fairs or shows. The matter of showing at Chicago next fall was held in abeyance.

Winter Schools.—The demand for the Cornell winter schools is far in excess of the college's present ability to meet. The tuition at these schools is only $1.50 for the week, which only partially remunerates the college for sending out four instructors to conduct the school. The grange at Kinderhook, Columbia County, secured a winter school, which will be held in the grange hall the week beginning January 27. The courses to be given are dairying, general farming, fruit growing, poultry culture and domestic science. A similar school has just closed at Oneonta.

Rural Credits.—''Farm Finance and Rural Credits'' will be the general theme of the Agricultural Society meeting at Albany this week. Reports of committees and the discussions thereon promise to afford large value to those present. The presence of Sir Horace Plunkett, of Dublin, Ireland, is anticipated. Again let us urge farmers to attend this series of important meetings.

Forestry Lectures.—A series of public lectures on forestry will be given at Syracuse University this winter by eminent foresters, among whom are Gifford Pinchot; I. J. Levison, of Brooklyn; F. W. Rane, of Massachusetts; Dr. B. E. Fernow, of Toronto; Alfred Gaskill, of New Jersey; Clifford R. Pettis, of New York, and others.—New Yorker.

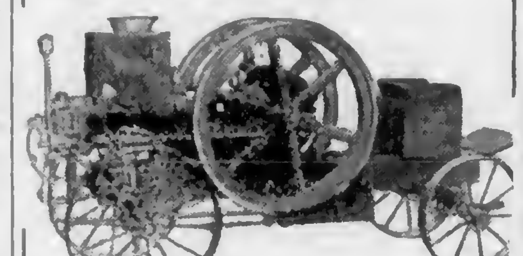
JOINT AGRICULTURAL MEETINGS

The joint meetings of the Pennsylvania State Board of Agriculture, State Live Stock Breeders Association, State Dairy Union and State Horticultural Association, will be held in Harrisburg, January 21, 22 and 23. The State Board of Agriculture will hold six sessions in Chestnut Street Hall, running thru the three days. The program consists of reports of standing committees and state agricultural officials. The Horticultural Society will hold its meetings on the second floor of the Board of Trade Building, with five sessions, beginning at 1.30 P. M. on Tuesday. The program includes addresses by some of the leading horticultural authorities of the country. The Live Stock Association meeting opens at 9 A. M., Wednesday morning, and continues thru Wednesday and Thursday, meetings being held in the Chestnut Street Auditorium. An excellent program has been arranged. The Dairy Union will hold its meetings on the first floor of the Board of Trade Building, with two sessions devoted to each of the three divisions, milk dealers, milk producers and butter makers. Evening sessions will be given up to joint meetings. The Friday evening meeting will be addressed by Prof. R. L. Watts, of State College, and Dr. Charles E. North, of New York City. The Wednesday evening meeting will be given to the discussion of benefits of a state fair, with addresses by Hon. W. E. Skinner, of Chicago, Ill., and Hon. A. P. Sandles, of Columbus, Ohio. The Tuesday evening meeting will be devoted to illustrated lectures by Mr. and Mrs. H. B. Fullerton, of Medford, L. I. Fruit, corn and dairy shows and commercial exhibits will be held in connection with the meetings.

INSTITUTES FOR THE WEEK

January 17-18, at Oakville, Cumberland Co., R. P. Kester, Dr. J. H. Funk and W. T. Wittman. At Hogestown, Cumberland Co., the same speakers. At Woodbury, Bedford Co., J. T. Campbell, L. O. Van Noy and W. R. White. At Rockland, Venango Co., F. Menges, F. H. Fassett and Dr. M. E. Conard. At Tunkhannock, Wyoming Co., L. W. Lighty, F. W. Card, W. M. Patton and E. S. Fowler. At Hobbie, Luzerne Co., D. H. Watts, S. W. Funk, C. L. Goodling and Prof. F. R. Stevens.

January 20-21, at Churchtown, Cumberland Co., R. P. Kester, Dr. J. H. Funk and W. T. Wittman.



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Household

RELIABLE CUSTARD RECIPES

By Mary Millar Buchanan

Custards require to be made carefully, but need not, unless for special occasions, be made expensively. The plain boiled custard, usually served with puddings or pies, may be cheaply prepared. By the use of flavoring extracts the very plainest custard can be made very dainty by adding a few drops of either lemon, vanilla, orange or rose extract, according to taste. But care must be taken not to add them until the custard has been boiled, else much of the delicate flavoring will be lost.

Plain Boiled Custard.—One quart of milk, 6 eggs, the peel of a good sized lemon, and 4 heaping tablespoonfuls of sugar. To prepare the custard, pour the milk into a clean saucepan with the peel of the lemon, and put it at the side of the fire for 20 minutes, and when on the point of boiling, strain into a basin to cool. Then stir in the sugar, eggs well beaten, and again strain into a clean basin or jar, which place in a deep saucepan of boiling water, and stir one way until it thickens. Then pour into a glass dish or custard cups ready to send to the table

Vanilla Custard.—Boil 1 pint of milk with 4 heaping tablespoonfuls of sugar for 15 minutes, then strain thru a piece of clean, thin muslin. Beat well the yolks of 6 eggs, pour over them the milk, into a bowl, placing it over a pan of boiling water and stirring rapidly until it thickens. Let the custard cool gradually, add a teaspoonful of vanilla extract and stir continually for 5 or 10 minutes, so that it is thoroly mixed. When cool, pour into a glass dish, beat the whites of the eggs to a stiff froth, spread thickly on the top of custard, sprinkle sifted sugar over, and serve cold.

A NEAT AND ROOMY FARM HOME IN NORTHERN JERSEY.
Lower Story is Built of Concrete Blocks.

Chocolate Custard.—Pour 2 tablespoonfuls of boiling water over 2 heaping tablespoonfuls grated chocolate, and let it stand near the fire until thoroly dissolved. Pour into a saucepan 1 pint of milk (if desired very rich, add a pint of cream), a pinch of salt, and 2 tablespoonfuls of sugar. Simmer over the fire for 10 minutes. Then add by degrees the yolks of 6 well-beaten eggs and the dissolved chocolate. Stir to a froth until it thickens, pour into a glass dish, when it is ready to serve.

Apple Custard.—Pare, cut up and stew nicely 4 or 5 good-sized cooking apples. When cooked, stir in 1 heaping tablespoonful of butter, 4 tablespoonfuls of sugar, 3 eggs well beaten, and 1 teaspoonful of lemon juice. Bake for half an hour in a buttered pudding dish in a moderate oven. Serve when cold with sugar and cream.

Custard for Fillings.—One cupful of milk, 2 yolks of eggs, 1 tablespoonful of cornstarch, one tablespoonful of sugar and 1 teaspoonful of vanilla extract. Mix the cornstarch and milk to a smooth paste, then stir it over the fire until it boils, then let it simmer for 10 minutes. Add the yolks of eggs, sugar and vanilla, and stir over the fire until the custard has thickened; it should not be allowed to boil. When cool, the custard is ready for use, and may be used instead of whipped cream for filling eclairs, etc.

Egg and Tomato Custard.—Break 4 eggs into a basin, beat up well and add 3 heaping tablespoonfuls of tomato pulp (that is, fresh or canned tomatoes rubbed thru a fine sieve), 1 tablespoonfull of milk or cream and 1 tablespoonful of grated cheese. Season with salt, pepper, paprika and a grate of nutmeg. Butter 8 small molds, fill them with the prepared custard, and bake them slowly in a moderate oven for about 10 minutes. Dish up and serve hot.

Savory Custard.—Mix 1 tablespoonful of meat extract with 4 tablespoonfuls of hot water, beat up 4 yolks of eggs and add to the above. Boil 1 gill of milk and stir into the egg mixture, season with salt, pepper, paprika; strain into a buttered pudding dish. Place this in a baking dish containing a little hot water, cover with buttered paper and cook in a moderate oven for 20 minutes. Serve hot.

Orange Custard.—Two whites of eggs, 4 yolks of eggs, 1 cupful of milk, 2 large oranges, 2 heaping tablespoonfuls sugar, 1 heaping tablespoonful of powdered gelatine, 1 tablespoonful of boiling water. Sieve the sugar onto a plate, and grate the rind from the oranges on top of it. Rub these two together with the fingers until thoroly blended, and then put this orange sugar into a basin. Add to it the yolks and whites of eggs, and beat together for a few minutes. Heat the milk, and pour it gradually into the basin, stirring all the time.

Then return all to the saucepan, and stir carefully over the fire until the custard thickens, but do not let it boil. Remove quickly from the fire, and strain into a basin. Dissolve the gelatine in the boiling water, and strain it into the custard, also the orange juice. Stir occasionally until lukewarm, then pour into a wet mold, and set in a cool place until firm. Turn out on a glass or silver dish. The mold may, if liked, be decorated at the top with a little clear orange jelly set with a few small sections of orange.

Chocolate Caramel Custard.—For the caramel take 3 ounces of lump sugar, 4 tablespoonfuls of cold water and a squeeze of lemon juice. For the custard, take 2 yolks of eggs, 2 whole eggs, 1 cupful of milk, 2 ounces of melted chocolate, 2 tablespoonfuls of sugar, 1 teaspoonful of vanilla extract, and a pinch of salt. Put the ingredients for the caramel into a saucepan, and let them cook, stirring all the time until they are a light coffee color. Watch the caramel carefully, as it is apt to burn. When ready, pour it into a plain dry mold, which has straight sides and a flat bottom, and turn the mold round and round until the caramel coats it uniformly. Allow this to become cold while making the custard.

Put the eggs into a basin with the sugar, flavoring, pinch of salt, and mix them to a cream with a wooden spoon. Heat the milk, adding to it the chocolate, and pour it slowly on to the egg mixture, stirring all the time. Strain the custard into the prepared mold and cover with a greased paper. Steam very slowly for 1 hour, or until the custard feels firm in the center; or bake in a moderate oven with some warm water round the mold. When the custard is cold, turn it out on a dish. It will have a glaze of caramel over the top, and some will run round the sides and serve as a sauce.

Custard Pudding.—One sponge cake, 1 pint of milk, 3 eggs and 1 teaspoonful of vanilla, and sugar to taste. Beat up the eggs well, pour the milk over the eggs, add vanilla and sugar to taste. Butter a pudding dish and place the sponge cake cut out in slices into it, then add the prepared custard, bake 1 hour in a moderate oven.

Clear Soup with Custard.—Mix the yolks of 6 eggs with 1 gill of water and a pinch of salt; strain the mixture and divide it into 3 equal parts; color one with red coloring, the other with green coloring, and leave the third plain. Put them into 3 small well-buttered molds, cover with a greased paper and steam until firm. Then turn them out and cut them into dice. At the time of serving, put a clear soup into a tureen, slip in the custard dice and serve immediately.

Coffee Custard.—Make 1 cupful of very strong coffee, 2 heaping tablespoonfuls of suger, 6 yolks of eggs and 1 gill of cream. When the coffee is nearly cold, add sugar and beat in the yolks of eggs and cream; mix well, pour into small buttered molds, cover with greased papers and steam slowly for 30 minutes. To make boiled coffee custards, make a rich custard, flavor with coffee extract, cook in a double saucepan, and stir till thickened. Pour into custard glasses and serve very cold.

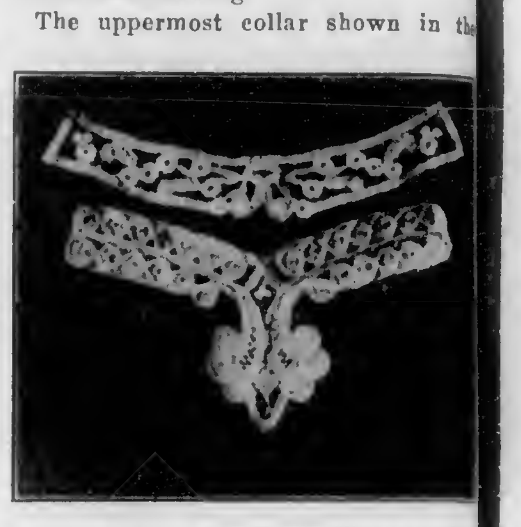
Cheese Custards.—Four eggs, ½ a cupful of milk, 2 tablespoonfuls of butter, 3 tablespoonfuls of grated cheese, salt, pepper and red pepper. Beat up the eggs, add milk boiling, cheese, salt, pepper and paprika; pour into buttered molds, stirring all the time, so as not to let the cheese settle. Stand the molds in a saucepan, allowing the water to come within half an inch of the top; simmer very gently until set. Cut some thin slices of bread, and stamp them out in rounds a little larger than the molds. Put the butter into a frying pan, and when quite hot fry the bread a golden color. Dish one custard on the top of each, and brown in the oven. Serve garnished with cress or parsley.

Custard for Ice Cream.—One pint of milk or cream, yolks of 8 eggs, 4 tablespoonfuls of sugar. Boil the milk, and pour over the well-beaten yolks of eggs and sugar, pour back into the saucepan. Stand in another pan of boiling water, and stir until it thickens. Pass thru a fine sieve, and when cold it is ready for use.

Another Recipe.—Boil 1 pint of milk, add it gradually to 2 well-beaten eggs with 4 tablespoonfuls of sugar; pour back into the pan, stand in boiling water, stir till thick, pass thru a fine sieve, and, when quite cold, use.

TWO ATTRACTIVE COLLARS

One of the late developments in lace work is known as Princess Louise lace. It is one of the most delicate and filmy of all the laces because of the lacy braids utilized in it and the exquisite floral patterns which are a distinctive feature. The stitches are usually quite simple and few in number, no such stress being laid on this part of the work as is customary in the case of most hand-made laces. A graceful, artistic design and a selection of braids well adapted to it constitute the necessary adjuncts to successful Princess Louise lace-making.



TWO ATTRACTIVE COLLARS.

The uppermost collar shown in the accompanying illustration is a handsome sample of this greatly admired lace. A pretty braid, scalloped on both sides, is utilized for the edges. A narrower, plain braid forms the leaves, while the roses are made of a dainty braid, straight on one edge and scalloped on the other.

In making the roses, cut for the center of the scallop, turning back each half on the wrong side and catching it down with a few buttonhole stitches in fine thread. Now overcast the ends together neatly. A draw thread will be found along the edge of most braids. Pull this up to form the circle and fasten it securely. The rosette should lie quite flat.

After making the roses, baste them and the other braids into position on the pattern as in lace work generally. The stitches used in the leaves and scrolls are plain Russian, while a small spider-web fills the central oval-shaped rosette. The background looks like the familiar Bruges bars, but is in reality a cord-like braid made for the purpose. It has tiny picots at regular intervals on either side, and is used in the needle-like thread, and carried back and forth to form the connecting bars. It is needless to say that the labor is greatly lessened by this unique substitute for the tedious bars, altho the effect is equally as good.

Silk braid, ecru in color, and woven considerably heavier on one side than on the other forms the basis of collar No. 2. The graceful coils are filled in with small webs. Woven cones, alternating from a central line, fill the long scrolls at each side in the tab, while larger woven devices fill the spaces above and below.

In making these, foundation threads are thrown across the space, crossing at the center, and the working thread is woven under and over the foundation threads to form the desired figure.—Mae Y. Mahaffy.

A TEA TABLE TALK

By Aurelia Harriet Worth

When Cowper, in his departure from the high flown topics that had so long engaged the attention of poets, turned his talents to the description of simpler objects, and wrote of the "tea tray," the "loud hissing urn" and the "cup that cheers but does not inebriate," he

could have no thought how frequently his words would be quoted afterwards, nor that the time and scene he commended for its domestic cosiness would still be, in many hours, the choicest of the day.

The American tea is an institution by itself, having no exact counterpart among the nationalities. The English "high tea" approximates it more closely than any other repast, but even that is apt to be more elaborate than its transatlantic cousin. The American tea is unique, and when properly managed, very charming. The chief difficulty in making it all it should be lies in the tendency known to all busy housekeepers, to get into one rut, and be shy about leaving it in an experimental search for diversity of diet.

In the country, as a rule, all the enterprise and energy of the cook seem to run to the concoction of various kinds of cake. The tea table of a prosperous farm-house will be supplied with a plate of cold, white bread, one of brown, possibly, tho not always, with a little cheese, some potatoes, and three or four kinds of cake, to say nothing of gingerbread and doughauts. For half the work and expense bestowed upon the ingredients, making and baking of that cake, a dainty relish might have been far more tempting and wholesome.

The cost of many such dishes is a drawback to the careful housewife, as it ought to be. It is a woman's business to supply her table at as reasonable a rate as possible, but it is no less her duty to render the menu as attractive as it is in her power to do, and by pleasant surprises and constant changes to make the food more wholesome, as well as toothsome. Anyone can set a good table on liberal means, but it takes talent and study to be both economical and an acceptable caterer.

Avoid the beaten paths, and do not be afraid to test new recipes once in a while. Fewer cakes and pies, and more savory "made dishes" would be an improvement alike over the healthfulness and tastefulness of the average table. The following recipes are not intended for elaborate supper parties, but for simple family teas in households where the wife and mother has to do most of the preparation herself. While it may be easier to serve beef, veal or chicken cold, it is believed that few women will grudge the slight additional labor involved by the following directions, if by its outlay they can render the evening meal more appetizing, and the home more attractive in its culinary department.

Dainty Dishes for Tea

Mounded Beef.—Two cupfuls of cold roast or boiled beef, chopped as for hash, one cupful of gravy, one tablespoonful of Worcestershire sauce, one tablespoonful of minced onion, one saltspoonful each of ground cloves, cinnamon and thyme, salt and pepper to taste, yolks of two raw eggs. Stir the ingredients together until all are thoroly incorporated, moistening with gravy until the mixture is as soft as it can be made and yet handled. Mound into a bricklike shape in a greased baking pan. Sift flour thickly over it and bake, covered, half an hour. Remove the cover, rub with butter and brown. Transfer carefully to a hot platter and serve.

Creamed Chicken.—One cup and a half of unskimmed milk, one tablespoonful of cornstarch, one tablespoonful of butter rubbed into the cornstarch, half a teaspoonful of minced onion, half a teaspoonful of minced parsley, a pinch of soda stirred into the milk, salt and pepper to taste, remnants of cold roast, boiled or broiled chicken, jointed or cut into neat pieces. Heat the milk to scalding in a double boiler, and pour a little upon the cornstarch and butter. Return to the fire, stir until it thickens, and add the seasoning. Drop the pieces of chicken into the sauce and let simmer five to ten minutes. Pour over rounds of fried bread, garnish with sprays of parsley and serve very hot.

Baked Ham Omelet.—Six eggs, one scant cupful of milk, one even teaspoonful of cornstarch, one cupful of cold boiled ham, chopped very fine. Whip the yolks and whites separately until the former are creamy and add the latter stiff. Beat them lightly together without mixing thoroly. Add the milk in which the cornstarch has been dissolved, and last of all stir the mixed ham in quickly. Pour into a buttered pudding dish, and bake immediately in a hot steady oven for 15 minutes. Should it brown too rapidly, cover until the omelet is fairly set. Do not let it stand after it leaves the oven, or it will fall and become heavy. This omelet will require longer for cooking than one made without meat. Instead of the ham, finely chopped chicken or veal may be used, but these must be lightly seasoned with pepper, salt and sweet herbs.

Minced Veal on Toast.—Prepare a cream dressing in the manner described above, and stir into it two cupfuls of cold lean veal, minced small with a knife, but not chopped. When the whole is smoking hot, pour it on slices of lightly buttered toast, from which the crust has been carefully trimmed. A border of scrambled eggs makes an agreeable addition to this dish.

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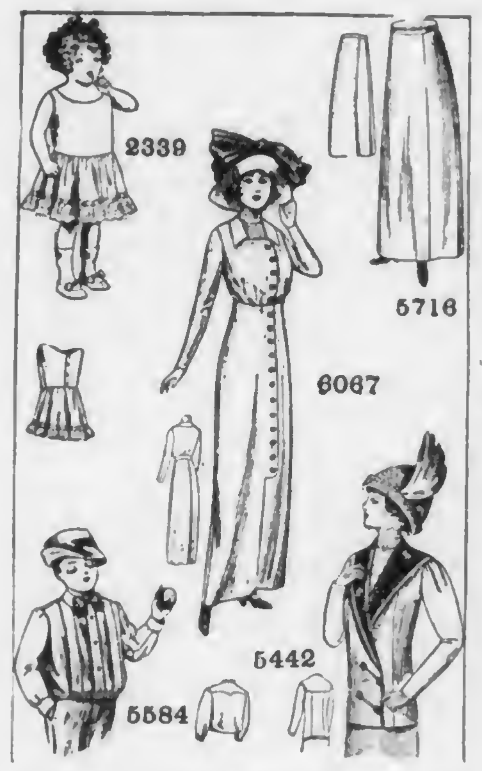

2339—Children's Petticoat.—This pattern is cut in 9 sizes, 1 to 9 years. For 5 years it requires 1¾ yards, 36 inches wide; 3⅜ yards of edging, 2¼ yards of insertion. Price of pattern, 10 cents.

6067—Ladies' Dress, with Four-Gored Skirt.—This pattern is cut in 5 sizes, 34 to 42 inches, bust measure. Size 36 requires 6 yards of 36-inch material, ⅝ of a yard of 22-inch all-over lace. Price of pattern, 10 cents.

5716—Ladies' Six-Gored Skirt.—This pattern is cut in 5 sizes, 22 to 30 inches, waist measure. Size 24 measures 3 yards around lower edge and requires 2⅞ yards of 30-inch material. Price of pattern, 10 cents.

5584—Boys' Shirt Blouse, with or without Back Yoke Facing.—This pattern is cut in sizes 4, 6, 8 and 10 years. Age 8 requires 2½ yards of 27-inch material. Price of pattern, 10 cents.

5442—Ladies' 25-inch Length Coat.—This pattern is cut in 6 sizes, 32 to 42 inches, bust measure. Size 36 requires 2¼ yards of 50-inch material, ¾ yard of 24-inch satin. Price of pattern, 10 cents.

Scrap Books.—Newspaper and other clippings should be pasted in a book for safe keeping; but sometimes one deems a dollar or so as rather too much to spend for a regular scrap album. A recent and good substitute was found by purchasing for the small sum of 20 cents, an ordinary blank book with unruled pages. By cutting out every other leaf to within a half-inch of the binding, it answers the purpose admirably.—S. Virginia Levis.

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Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., Jan. 13, 1913.

Butter prices on solid packed stock declined 1c. Receipts were mostly of unattractive grades. Egg receipts were more liberal. Choice stock, however, ruled steady. The poultry demands were sufficient to absorb the somewhat limited supply and prices ruled firm. Trading in fruits and vegetables was about normal.

Butter.—Western creamery, 37c; extras, 35c; firsts to seconds, 28@32c; special prints, 41@44c; near-by prints, 36@38c.

Cheese.—New York full cream, 18@18½c; skims, 11@15c, according to quality.

Eggs.—Candled, 34@37c doz.; extras, 31c. Current receipts at $7.80@8.10 per standard case.

Poultry.—Fowls, 14@16c; old roosters, 11½@12c; spring chickens, 15@16½c; ducks, 16@17c; pigeons, 18@25c pair; turkeys, 18@19c.

Dressed Poultry.—Western fowls, 16½c; roosters, 12½c; chickens, 16@18c; turkeys, 20@23c.

Vegetables.—White potatoes, choice, 73@75c bu. Onions, 30@40c bu. Cabbage, $9@10 ton. Lettuce, 75c@$1.25 basket. Cucumbers, $2.75@4.00 basket. Celery, 25@50c bch. Spinach, 50@75c bbl. Kale, 50@60c bbl. Egg plant, $1.75@2.50 box. String beans, $1.50@3.00 bu. Peas, $2@3 basket. Peppers, $1.00@1.50 carrier. Tomatoes, $2.50@3.25 carrier.

Fruit.—Apples, choice varieties, 25@75c hamper, $2.00@3.50 bbl. Cranberries, $5.00@9.00 bbl.; $1.75@2.75 crate.

Hay and Grain.—No. 1 timothy, new, $19.50@20.00; No. 2, $17.00@18.00; No. 3 do., $14.50@15.50. No grade, $10.00@12.00. Clover, mixed, No. 1, $16.00@16.50; No. 2 do., $14.00@15.00. No. 1 tangled rye straw, $12.50@13.00; No. 1 oats straw, $10.50@11.00. New shelled corn, as to quality, 57@58c; new cob, 54@55c per 70 lbs. No. 2 red wheat, 99½c@$1.00; No. 3 do., 94½@95c. No. 2 white oats, 40½@41c. Standard white, 39½@40c; No. 3 white, 38½@39c.

Hides and Skins.—Steers, abattoir, 17½@18c; do. country, 14@14½c. Cows, abattoir, 14½c; do. country, 13c. Bulls, abattoir, 13c; do. country, 11c. Calf skins, Nos, 5 to 12 and up, $1.35@2.55; do. green, 13@14c lb.

Seeds.—Timothy, $3.15@3.25 bu.; clover, white, $25; do. crimson, $6.25; do. mammoth, $14.50; do. sweet, $13.00; do. alsike, $13.25; red top, per bu., $13.50; alfalfa, $7.00@10.00; Canada field peas, $2.35; vetch, $8.50; rye, winter, $1.35; spring, $2.25; soy beans, $3.25; barley, $2.50; buckwheat, $1.50; cowpeas, $3.00@3.25; millet, $1.90@2.75; oats, $1.20; wheat, $1.70@2.00.

Coffee.—Rio, 7s, 13¾c; Santos, 4s, 15¾c. Mild Coffee—Cordova, 16@18c.

Provisions.—City beef, smoked and air-dried, 21@22c. Beef hams, 29@31c. Pork, family, $21.00@22.00. Hams, cured, 13¾@14½c; skinned, 12@12¾c; smoked, 14@16c. Other hams, smoked, city cured as to brand, 15@16c. Picnic hams, 11¼@11½c; do. smoked, 13@13½c. Bellies in pickle, 13½@14c. Breakfast bacon, as to quality, 16@20c. Lard, refined, 11⅜@11½c; do. in tubs, 11¼@11⅜c; do. kettle rendered, 11@11½c. Tallow, prime city, 6¾c; do. country, 6¾c; do. dark, 5¾c; do. cakes, 7c.

Sugar.—Cut loaf, $5.50 cwt.; cubes, $4.95; powdered, $4.80; granulated, $4.70; standard granulated, $4.75; crystal A, $4.70.

Flour.—For 196 lbs., in wood, winter clear, new, $4.10@4.25; do. straight, new, $4.40@4.65; favorite brands, $4.75@5.25. Rye flour, Penna., $3.60@3.75.

BALTIMORE PRODUCE

Baltimore, Md., Jan. 13, 1913.

A greater demand in the butter market caused prices to increase slightly. The supply of eggs was sufficient to meet the demand and prices remained steady. The demand for poultry was quiet, and the market was without much change. Fruits and vegetables were fairly active at last week's figures.

Butter.—Creamery, fancy, 36c; do., choice, 34@35c; prints and blocks, 34@37c. Maryland and Penna. rolls, 22@24c; prints, 21@21½c. Process, 26@28½c.

Cheese.—Flat, 17½c; Daisy, 18@18½c.

Eggs.—Md. and Penna., firsts, 27c; western, 27c; southern, 24@25c.

Live Poultry.—Hens, 15c; chickens, 16c; old roosters, 10c. Turkeys, 20@21c. Ducks, 14@15c. Geese, 14@15c. Guinea fowls, 30@45c each.

Dressed Poultry.—Turkeys, 20@21c; chickens, 16@17c; roosters, 10@11c; ducks, 16@18c; geese, 15@16c.

Vegetables.—Potatoes, white, 65@75c bu. Sweets, $2.25@2.75 bbl. Cabbage, $4.00@5.00 per ton; Danish, $8.00@10.00. Onions, 40@45c bu. Lettuce, 75c@$1.00 basket. Egg plant, $2.25@3.00 crate. Peppers, $1.15@2.00 crate. Squash, 10@15c basket. Spinach, 35@40c box. Cucumbers, $3.00@3.50 basket. Beans, green, $1.50@2.50 basket. Celery, $4.00@4.50 crate. Turnips, 17½@25c box. Cauliflower, $2.50@2.75 bbl. Horseradish, $1.60@2.00 box. Beets, 45@50c bu.

Fruit.—Apples, new, $2.00@3.50 bbl., 50c@$1.00 bu. Cranberries, $8.00@9.00 bbl.

Grain.—Wheat.—No. 2 red western, $1.07½; contract, $1.08. Corn, new, 54⅝c; contract, 54¾c. Oats, No. 2 white, 40c; standard white, 39c; No. 3 white, 38c. Rye, 53@60c.

Hay and Straw.—No. 1 timothy, $18.50@19.00. No. 2 timothy, $16.50@17.00. No. 3 do., $14.00@16.00. Choice mixed, $15.00@15.50. No. 1 clover, $13.00@13.50. No. 2 do., $10.00@12.00. No. 1 tangled rye straw, $12.50@13.00. No. 1 oat straw, $9.00@10.00. No. 1 wheat straw, $8.00.

Millfeed.—Spring bran, $24.00@24.50. Middlings, flour to white, $26.00@28.00; western middlings, $24.00@24.50; city mills mids., $24.00@24.50.

NEW YORK PRODUCE

New York City, Jan. 13, 1913.

The recent colder weather has had a tendency to improve the butter market. Both receipts and demand have increased, the former being of more attractive stock and the market is firm. Eggs are steady to firm on good grades. The demands are only moderate. Poultry is steady, with receipts fully equal to the demand. Fruits and vegetables are fairly active.

Butter.—Creamery firsts to extras, 31@35c; thirds to seconds, 26@30c; factory, 21@24½c; state dairy, 23@33c; packing stock, 18@22c; process, 22½@27c.

Cheese.—Whole milk special, 18c; do., common to fancy, 16@17¾c; skims, 8@14¾c.

Eggs.—State and near-by, 35@38c; fresh gathered, 27@30c; mixed, 26@29c; refrigerator, 14@21c.

Dressed Poultry.—Turkeys, dry, 19@23c; chickens, Penna., 15@25c; fowls, 13@16c; old roosters, 12½c; ducks, 17@20c; roasters, 18@20c.

Live Poultry.—Fowls, 12½@14c; chickens, 12½@13c; roosters, 10c; ducks, 14@15c; geese, 14c.

Grain.—Steady. Wheat, No. 2 red, $1.08; No. 1 Northern, $1.01½c. Corn, 57½c. Oats, standard white, 38@40c.

Vegetables.—Potatoes, state, $1.75@1.85 per 165-lb. bag. Cabbage, $3@4 ton; do. Danish, $6.00@9.00 ton. Green beans, $1.50@3.50 basket. Carrots, $1.25@1.50 bag. Cucumbers, 60c@$1.10 dozen. Lettuce, 75c@$1.75 basket. Squash, $1.50@1.75 bbl. Celery, $1.00@3.00 case. Horseradish, $3.00@5.00 cwt. Parsnips, 75c@$1.12 bbl. Turnips, $1.00 bbl.

Fruit.—Apples, $1.75@4.00 bbl., according to variety. Pears, $2.00@4.00 bbl. Cranberries, $7.00@9.50 bbl.

Nuts.—Hickory, $1.00@1.50 bu. Black walnuts, 25@50c bu. Butternuts, $1.00.

YORK PRODUCE MARKET

York, Pa., Jan. 13, 1913.

The attendance early in the week was very poor, but buying was up to normal the latter part of the week. Prices remained unchanged, except on butter and eggs. Both showed decided weakness, butter running as low as 28 to 30 cents per lb. This is unusual and another advance is looked for.

Butter.—Country, 28@32c; separator, 30@38c. Milk, 6c per qt.

Eggs.—29@32c; storage, 24@28c doz.

Poultry.—Hens, 12@14c. Dressed poultry, 40@75c each.

Vegetables.—Potatoes, 10c half peck; 55@60c bu.; cabbage, 2@4c each; lettuce, 5@6c; beets, 3@5c bunch, 10c per ½ pk.; radishes, 2@5c; turnips, 8@10c per ½ pk.; onions, 10c per ½ pk.; peppers, 10c doz.; Lima beans, 12@15c qt.; soup beans, 10c qt.; celery, 3@10c stalk; sweet potatoes, 10c per ½ peck; spinach, 10c per ½ pk.; parsnips, 10c per ½ pk.; sauer kraut, 5@8c qt.; lard, 14@16c lb.; corn meal, 5@6c qt.

Fruit.—Apples, 10@20c a half peck; grapes, 10@15c ½ pk.; pears, 12@15c per ½ pk.; chestnuts, 15@25c qt.; walnuts, 15c per ½ pk.

Retail Grain Market.—Wheat, $1.09; corn, 65c; oats, 50c; bran, $1.35 a cwt.; rye, 78c; middlings, $1 55 a cwt.

WASHINGTON PRODUCE

Washington, D. C., Jan. 13, 1913.

Eggs.—Near-by, fresh, per dozen, 26c; southern, per dozen, 25@26c.

Cheese.—New York, new, per pound, 19c; flat, 19c.

Butter, best prints, per pound, 38c; tub, 37c; process, 27@28c; undergrades, 25c.

Live Poultry.—Hens, per lb., 15c; roosters, 9c; springers, 16@17c; turkeys, 17@19c; geese, live, 12@13c; ducks, 13@15c.

Vegetables.—Potatoes, bbl., $1.25@1.75; 70@80c bu. Onions, 90c@$1.10 per 100-lb. bag. Lettuce, per bas., $1.00@3.00. Beans, $2.00@3.50 basket. Peppers, per crate, $1.00@1.25. Egg plants, per box, $2.00@2.50. Squash, per bbl., $1.25@1.75. Beets, $2.00@3.50 per 100 bchs. Mushrooms, per lb., 50@75c. Carrots, 1½@2½c bch. Cabbage, $2.00@3.50 bbl. Radishes, 50c@$1.00 per 100. Cauliflower, $1.50@2.00 crate. Apples, $1.50@4.00 bbl.

WILMINGTON PRODUCE

Wilmington, Del., Jan. 13, 1913.

The local market is well supplied, particularly with farm produce. Prices are mainly steady at last week's quotations.

Fruits.—Apples, 28@60c pk.; $2.50@4.00 bbl. Grapes, $4.00@6.50 keg.

Vegetables.—Potatoes, 80c bu.; 30c pk. Cabbage, 75c@$1.00 bbl.; $4.00@5.00 per 100; 4c each. Onions, 20c ½ pk. Celery, 25@50c doz.; 5@15c bch. Spinach, $1.50 bbl. Sweet potatoes, 75@80c basket; $3@3.50 bbl. Kale, $1.25 bbl. Carrots, 10c ½ pk. Lettuce 5@8c head.

Poultry.—Chickens, live, 15@16c; do., dressed, 16@17c. Ducks, 14c lb.; dressed, 17c.

Eggs.—32@40c; storage, 27@30c.

Butter.—Creamery, 30@35c; prints, 38@45c.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., Jan. 13, 1913.

The cattle market was somewhat quiet and lacked the animation of the preceding week. Under a slow demand, prices lowered a fraction, especially on the top grades.

	Beef Cattle	Sheep and Lambs	Hogs
Total for week	—4,512	13,374	4,653
Previous week	—3,932	12,154	4,306

Best steers	$8.62½@8.65
Choice steers	8.25@8.50
Good	7.75@8.00
Medium steers	7.00@7.25
Common steers	6.50@6.75
Bulls	4.50@6.50
Fat cows	5.25@6.25
Thin cows	2.75@3.25
Milk cows	40.00@65.00

Veal calves are steady.

Best calves	$11.00@12.00
Good to choice do.	10.00@10.50
Medium	7.00@8.00
Common do.	6.50@6.75
Thin do.	5.00@8.00

Lambs are held steady; while sheep, which are not plentiful, are a little higher. An increase of receipts will force prices down.

Extra wethers	$5.25@6.25
Choice wethers	5.00@5.75
Good wethers	5.00@5.25
Common to medium	3.00@4.25
Ewes, fat	4.75@5.25
Extra lambs	9.25@9.50
Good to choice do.	8.75@9.00
Common to medium	5.75@8.25

Hogs are about steady, westerns selling at $10.50@10.75.

City Dressed Stock.—Choice classes of dressed meat are steady. Trade is normal. Steers, 10@13½c; heifers, 9@12c; cows, 7½@10½c. Veal calves, 14@16c; country dressed calves, 13@14½c; extra do., 15c. Sheep, 8@9c; extra wethers, 10c. Spring lambs, 13@15c. Hogs, 14c.

NEW YORK LIVE STOCK

New York City, Jan. 13, 1913.

Cattle receipts were 3,588 head. The market is irregular. Bulls and cows are steady.

Steers	$4.75@8.60
Bulls	4.75@6.50
Cows	3.00@6.00

Dressed beef weak at $10.00@13.50 for native sides; $9.00@10.50 for light weights.

Calf receipts were 2,892 head. The market is steady to strong.

Choice veals	$12.00@12.50
Good veals	8.50@11.50
Culls	6.00@8.00
Barnyard calves	5.00@5.75
Fed calves	6.00@8.00
Westerns	4.00@5.25

Dressed calves are steady.

City-dressed veals	14@19c
Country-dressed veals	9½@16c

Sheep and lamb receipts were 10,900 head. Sheep are higher and lambs steady.

Sheep	$4.00@6.00
Culls	3.00@3.75
Lambs	8.50@9.75
Culls	6.00@7.00
Yearlings	6.00@8.00

Hog receipts were 17,239 head. The market is 15@25c lower.

Light to heavy	$7.70@7.80
Pigs	7.90@8.00
Roughs	6.75@7.00

BALTIMORE LIVE STOCK

Baltimore, Md., Jan. 13, 1913.

Cattle receipts for the week were 2,090 head, as compared with 2,990 head last week. The market is about steady.

Steers	$5.00@8.50
Heifers	4.25@7.00
Cows	2.15@5.70
Bulls	3.25@5.50
Fresh cows	$27.50@80.00

Sheep and lamb receipts for the week were 3,878 head, compared with 3,464 head last week. Under light supply, the market is firmer.

Sheep	$3.00@3.25
Lambs	6.00@9.75

Hog receipts for the week were 15,837 head, against 14,385 head last week. The market is easier.

Light westerns	$7.25@8.00
Heavy to medium	8.00@8.25
Near-by	7.80@7.90
Pigs	7.00@7.80
Roughs	6.00@7.50

Calf receipts this week were 454 head, against 483 head a week ago. The market is lower under fair supply, at 5½@11c lb.

BUFFALO LIVE STOCK

Buffalo, N. Y., Jan. 13, 1913.

Cattle receipts today were 3,500 head. Trading was active and the market strong, but prices went lower than a week ago.

Choice heavy steers	$8.75@9.00
Medium	8.00@8.35
Yearlings	8.00@9.00
Plain heavy	7.50@7.75
Handy butchers	7.25@7.75
Good to choice fat cows	5.00@7.00
Good to choice heifers	6.00@7.50
Butcher bulls	4.00@6.75
Feeders	5.40@6.75
Stockers	4.50@5.50
Cows and springers	35.00@75.00

Calf receipts today were 1,000 head. The market was active and steady.

Choice veals	$10.00@11.75
Light and thin	4.00@6.50

There were 21,200 head of sheep and lambs on sale today. The market was active.

Choice lambs	$9.25@9.40
Poorer grades	6.00@6.50
Yearlings	7.00@8.25
Wethers	6.00@6.25
Ewes	3.50@5.75
Sheep	4.50@6.00

Today's hog receipts were 19,200 head. The market was active, but prices lower than last week.

Heavies	$7.50@7.60
Mixed and medium	7.50@7.60
Yorkers	7.50@7.60
Light Yorkers	7.50@7.60
Pigs	7.50@7.60
Stags	5.25@6.25
Roughs	6.65@6.80

PITTSBURGH HAY AND GRAIN

Pittsburgh, Pa., Jan. 13, 1913.

In spite of the fact that the receipts of timothy hay have been most liberal, the demand seems to be active enough to keep the market pretty well cleaned up. Clover and threshed hay have been dull because of the fact that buyers are stocked up. Mixed and prairie hays are a shade stronger. Straw is arriving freely, but the demand is good and market steady. No. 1 timothy, $16.00@16.50; No. 2 do., $14.00@15.00; No. 3 do., $12.00@13.00; No. 1 light mixed, $15.00@15.50; No. 1 clover mixed, $15.00@15.50; No. 2 do., $13.00@14.00; No. 1 clover, $15.00@15.50; No. 2 do., $12.00@14.00. No. 3 prairie, $11.00@11.50; No. 4 do., $9.00@10.00. No. 1 oat straw, $10.00@10.25; No. 2 do., $9.75@10.00; No. 1 wheat, $10.00@$10.25; No. 2 do., $9.75@10.00; No. 1 rye, $11.00@11.50. No. 2 do., $9.50@10.00. Ear corn arrivals are about sufficient to meet the demand; market easier. No. 2 yellow, 54@55c. No. 2 high mixed, 53@54c. Shelled corn is active and firm; arrivals are easily placed at market quotations. No. 2 yellow shelled, 54½@55½c; No. 3 do., 53½@54½c; No. 3 natural, 51½@52c; sample, 50@51c. Oats are in heavy receipt and slow demand. Market dull. No. 2 white, 37@37½c; standard, 36@37c; No. 3 do., 35½@36c; No. 4 do., 34@35c. The demand for middlings is very slow, but bran has improved. Market dull. No. 2 white mids., $25.00@25.50; No. 1 brown mids., $22.50@23.00. Winter wheat bran, coarse, $23.00@23.50; do., medium, $22.50@23.00.

ELGIN BUTTER QUOTATION

Elgin, Ill., Jan. 13, 1913.

The quotation committee of the Elgin Board of Trade this afternoon declared butter firm at 33c a pound.

NEW YORK MILK QUOTATION

The wholesale milk price is $1.81 per 40-quart can for class C; class B, $1.91.

TOBACCO MARKET

Dealers and manufacturers of imported tobacco are much enthused over the Congressional hearing of the proposed reduction in duty on such foreign tobacco, and they are evidently well represented before the proper committees. It is probable that, as is usually the case, the farmers' side will not be adequately presented, and it is to be feared that the result will be a repetition of the old fact that those who go after things are those who get them. The matter will be up before the Ways and Means Committee of the House of Representatives on January 17th.

The local leaf market is reported as being practically at a standstill. The outlook for 1913 is considered fair at the present time. Despite the late report under the Cantrill law, it is assumed that manufacturers' stocks are low, and that consequently the demand will be good and steady. However, there were but few sales by growers, but these were at strong prices. Pessimistic dealers are predicting lower prices, and that those who have not sold will be compelled to take from $1@3 per cwt. less than those who sold heretofore. Time alone can reveal the result.

Growers are interested in the continued run of 1909 tobacco. Cigar manufacturers are using this in conjunction with other tobacco, and it is thought that within a short time it will be out of the hands of packers. A reliable estimate places the amount on hands at 30,000 cases.

Momentous as are Pennsylvania tobacco interests, they are eclipsed by those of Tampa, Fla., where the output the past year is placed at $26,350,000. Among the reasons for the success of this southern city are the moist and agreeable climate, proximity to Cuba, which affords both tobacco and workmen, and a singular absence of other industries and consequent division of local interest.

A prominent farmer is much interested in the possibility of raising calabash gourds. In an experiment the past season, 82 vines produced 109 fruits, each capable of being made into a pipe. The calabash is a native of Africa, and the pipes rival meerschaum in market value.—H. E. Tweed, January 13, 1913.

CATALOG NOTES

Profits in Dehorning.—Reasons why it pays to dehorn cattle, advantages of dehorning, and best ways of performing this operation are all told in an interesting folder now being distributed by M. T. Phillips, Box 127, Pomeroy, Pa., manufacturer of well-known dehorning knives. The folder is sent free upon request.

Orchard Facts.—The 1913 catalog of the Harrison Nurseries is a beautiful piece of work, from an artistic standpoint, and a valuable orchard and garden guide, from the standpoint of information contained. It not only discusses and illustrates varieties offered, but it gives information on orchard culture and practice. It will be sent free if you mention Pennsylvania Farmer. Address Harrison's Nurseries, Berlin, Md.

Milking Machines.—How one man can milk 25 cows an hour is interestingly and convincingly told in a new catalog now being distributed by The Hinman Milking Machine Co. In addition to describing and illustrating the Hinman machines, this catalog tells just what a prospective buyer would want to know about cost, speed, power, efficiency, economy, cost of maintenance and other practical details. Time and labor are the two most troublesome factors in dairy work, and the milking machine is rapidly coming in as the greatest time and labor saving device. Over 25,000 Hinman machines are now in successful operation. The catalog will be sent free upon request, if you mention Pennsylvania Farmer. Address Hinman Milking Machine Co., Oneida, N. Y.

Developing the West.—The Kuhn Bros., of the Kuhn Irrigated Land Co., of Pittsburgh, have vested the United States Department of Agriculture with 40 acres of land, in the heart of their Sacramento Valley Irrigated Land holdings, to be used as an experiment station. This irrigated tract covers an area of approximately 400 square miles of deep, friable soil adapted to a wide range of fruits and crops. The experiment station is expected to extend the variety and value of the crops grown. This company is perfecting a system of irrigation development which will set a new standard for such work. It is constructing a canal to a point of the highest boundary line of every 40 acres, constructing and placing in position all headgates, flumes and other devices in the main canals and main laterals, building a road along one side of every 20-acre sub-division, and providing a comprehensive drainage system. A water right accompanies every acre of land, and the ownership of the completed canal system will eventually be conveyed to the land owners.

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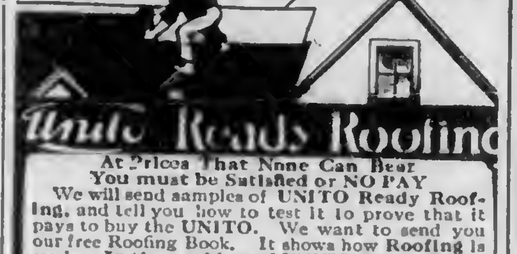

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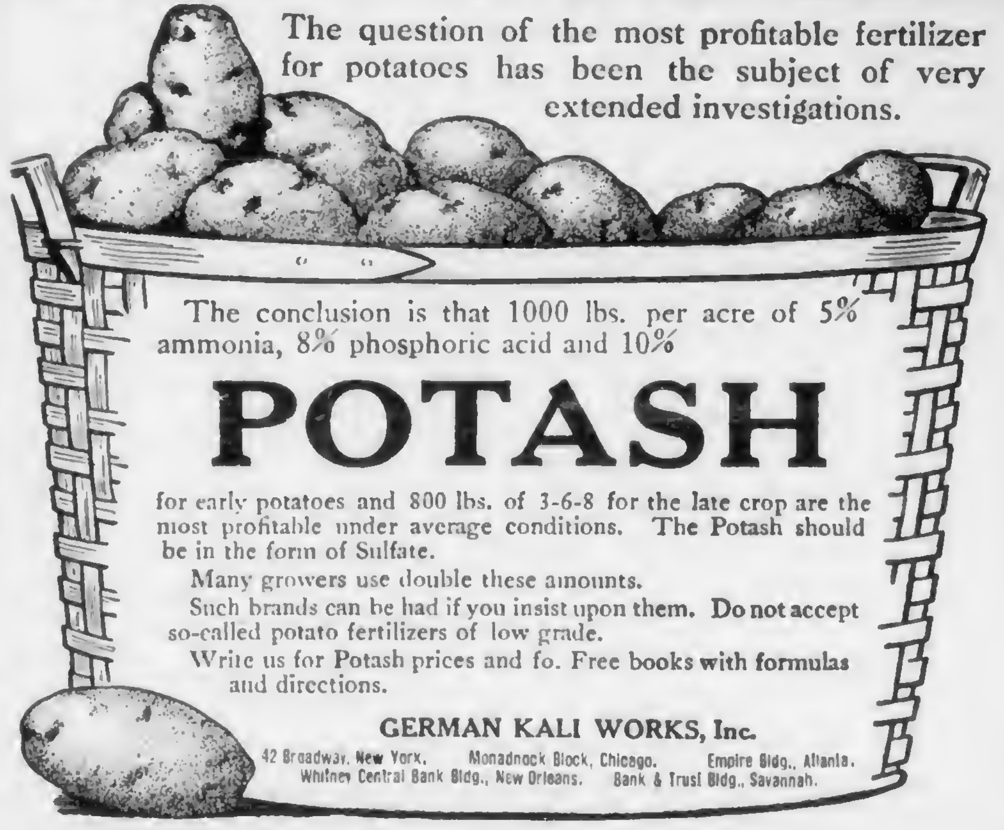

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BOOK II

WHAT HAPPENED AT NINE O'CLOCK

SYNOPSIS OF PRECEDING CHAPTERS

The scene of the story is laid in the home of Mrs. Varney, the wife of a Confederate general, in the city of Richmond. The city is being beseiged and is in danger of Union invasion. Edith Varney has fallen in love with Captain Thorne, who is accused by Arrelsford, a Confederate Secret Service man, of being a spy. Captain Thorne is under suspicion and is being watched. Wilfred Varney has just secured his father's consent to join the army. Arrelsford has planned to bring a Union prisoner to the Varney house to betray Thorne.

CHAPTER VIII (Concluded)

Thorne took one of the candles from the sconces on the wall and lighted the candelabra that stood on the nearest table. Holding the paper near the light, he glanced around rapidly, and then read it, giving no outward evidence of his surprise and alarm, altho the girl was now watching him narrowly. He glanced at her and then looked at the paper again, and slowly read aloud its message:

'' 'Attack tonight?' '' he said very deliberately. ''Umph, 'plan 3? Attack tonight, plan 3!' This seems to be in some code, Miss Varney, or a puzzle.''

''It was taken from a Yankee prisoner.''

''From a Yankee prisoner!'' he exclaimed in brilliantly assumed surprise.

''Yes, one captured today. He is down at Libby now. He gave it to one of our servants, old Jonas, and——''

''That's a little different,'' said Thorne, examining the paper again. ''It puts another face on the matter. This may be something important. 'Attack tonight,' '' he read again, '' 'Plan 3, use telegraph!' This sounds important to me, Miss Varney. It looks to me like a plot to use the Department Telegraph lines. To whom did Jonas give it?''

''To no one.''

''Well, how did you——''

''We took it away from him,'' answered Edith.

This was a very different statement from her original intention, but for the moment the girl forgot her part.

''Oh,'' said Thorne, ''I think that was a mistake.''

''A mistake?''

''Yes.''

''But why?''

''You should have let him deliver it, but it is too late now. Never mind.'' He turned toward the door.

Edith caught him by the arm. Was he going out to certain death or what?

''What are you going to do?'' she asked breathlessly.

''Find Jonas, and make him tell for whom this paper was intended. He is the man we want.''

The girl released him, and caught her throat with her hand.

''Captain Thorne,'' she choked out, and there was joy and triumph in her face, ''they have lied about you.''

Thorne turned to her quickly.

''Lied about me!'' he exclaimed. ''What do you mean?''

He caught the girl's hands in his and bent over her.

''Don't be angry,'' pleaded Edith, ''I didn't think it would be like this.''

''Yes, yes, but what do you mean?'' Edith sought to draw her hands away from him, but Thorne would not be denied.

''I must know,'' he said.

''Let me go,'' pleaded the girl, ''don't you understand——''

But what she might have said further was interrupted by the sharp, stern voice of the Corporal outside. He spoke loud and clearly, there was no necessity for precaution now.

''This way! Look out for that side, will you?''

Thorne released the hands of the woman he loved and stood listening. Edith Varney took advantage of such a diversion to dart thru the upper door, the nearer one, into the hall.

''I don't want to be here now,'' she said, as she flew away.

Thorne's hand went to his revolver which hung at his belt. He had not time to draw it before the Corporal and the two men burst thru the door. There were evidently others outside. Thorne's hand fell away from his revolver, and his position was one of charming nonchalance.

''Out here!'' cried the Corporal to one of the soldiers. ''Look out there!'' pointing to the doorway thru which two men instantly disappeared.

''What is it, Corporal?'' asked Thorne composedly.

The Corporal turned and saluted.

''Prisoner, sir, broke out of Libby! We've run him down the street, and he turned in here somewhere. If he comes in that way, would you be good enough to let us know?''

''Go on, Corporal,'' said Thorne coolly. ''I'll look out for this window.''

He stepped down the long room toward the far window, drew the curtains, and with his hand on his revolver, peered out into the trees beyond the front of the house.

CHAPTER IX

The Shot That Killed

A glance thru the window showed Captain Thorne that the yard beyond, which had been empty all evening, was now full of armed men. The Corporal had gone out thru the hall door back of the house whence he had entered. There was no doubt but that the back windows would be equally well guarded. The house was surrounded, no escape was possible. He was trapped, virtually a prisoner, altho for the time being, they had left him a certain liberty—the liberty of that one large room! It was quite evident to him that he was the object of their suspicions, and he more than feared that his real affiliations had been at last discovered.

Apparently, there would be no opportunity now in which he could carry out his part in the cunningly devised scheme of attack. ''Plan 3'' would inevitably result in failure, as so many previous plans had resulted, because he would not be able to send the orders that would weaken the position. The best he could hope for, in all probability, was the short shrift of a spy. He had staked his life on the game and it appeared that he had lost.

Nay, more than life had been wagered, honor. He knew the contempt in which the spy was held; he knew that even the gallantry and intrepidity of Andre and Hale had not saved them from opprobrium and disgrace.

And there was even more than honor upon the board. His love! Not the remotest idea of succumbing to the attractions of Edith Varney ever entered his head when he attempted the desperate, the fatal role. At first he had regarded the Varney house and herself as a chessboard and a pawn in the game. The strength of character which had enabled him to assume the unenviable part he played, because of his country's need, for his country's good, and which would have carried him thru the obloquy and scorn that were sure to be visited upon him—with death at the end!—did not stand him in good stead when it came to thoughts of her. Until he yielded to his passion, and broke his self-imposed vow of silence, he had fought a good fight. Now he realized that the woman who should accept his affections would compromise herself forever in the eyes of everything she held dear, even if he succeeded and lived, which was unlikely.

He had never, so he fancied, in the least and remotest way given her any evidence that he loved her. In reality, she had read him like an open book, as women always do. He had come there that night to get the message from Jonas, and then to bid her good-bye forever, without disclosing the state of his affections. If he succeeded in manipulating the telegraph and carrying out his end of the project, he could see no chance of escape. Ultimate detection and execution appeared certain, and any avowal would therefore be useless. But he had counted without her. She had shown her feelings, and he had fallen. To the temptation of her presence and her artless disclosure, he had not been able to make adequate resistance.

He was the last man on earth to blame her or reproach her for that; but the fierce, impetuous temperament of the man was overwhelming when it once broke loose, and he felt that he must tell her or die.

Because of his iron self-repression for so long he was the less able to stand the pressure in the end. He had thrown everything to the winds, and had told her how he loved her.

Out there in the moonlight in the rose arbor, the scent of the flowers, the southern night wind, the proximity of the girl, her eyes shining like stars out of the shadows in which they stood, the pallor of her face, the rise and fall of her bosom, the fluttering of her hand as unwittingly or wittingly, who knows, she touched him, had intoxicated him, and his love and passion had broken all bounds, and he had spoken to her and she had answered. She loved him. What did that mean to him now?

Sometimes woman's love makes duty easy, sometimes it makes it hard. Sometimes it is the crown which victors wear, and sometimes it is the pall that overshadows defeat.

What Edith Varney knew or suspected concerning him, he could not tell. That she knew something, that she suspected something, had been evident, but whatever her knowledge and suspicion, they were not sufficiently powerful or telling to prevent her from returning love for love, kiss for kiss. But did she love him in spite of her knowledge and suspicion? The problem was too great for his solution then.

These things passed thru his mind as he stood there by the window, with his hand on his revolver, waiting. It was all that he could do. Sometimes even to the most fiery and the most alert of soldiers comes the conviction that there is nothing to do but wait. And if he thinks of it, he will sympathize with the women who are left behind in times of war, who have little to do but wait.

The room had suddenly become his world, the walls his horizon, the ceiling his sky. At any exit he would find the way barred. Why had they left him in the room, free, armed, his revolver in his hand?

None but the bravest would have entered upon such a career as he had chosen. His nerves were like steel in the presence of danger. He had trembled before the woman in the garden a moment since; the stone walls of the house were no more rigidly composed than he in the drawing-room now. It came to him that there was nothing left but one great battle in that room unless they shot him from behind door or window or portiere, giving him no chance. If they did confront him openly he would show them that if he had chosen the Secret Service and the life of a spy he could fight and die like a man and a soldier. He held some lives within the chamber of his revolver, and they should pay did they give him but a chance.

Indeed, they were already giving him a chance, he thought to himself as he waited and listened. He was utterly unable to divine why he was at liberty in that room, and why he was left alone, or what was toward.

In the very midst of these crowding and tumultuous thoughts which ran thru his mind in far, far less time than it has taken to record them, he heard a noise at the window at the farther side of the room, as if someone fumbled at the catch. Instantly Thorne shrank back behind the portieres of the window he was guarding, not completely concealing himself, but sufficiently hid as to be unobserved except by careful scrutiny in the dim light. Once more he clutched the butt of his revolver swinging at his waist. He bent his body slightly, and even the thought of Edith Varney passed from his mind. He stood ready, powerful, concentrated, determined, confronting an almost certain enemy with the fierce heart and envenomed glance of the fighter at bay.

He had scarcely assumed this position when the window was opened, and a man was thrust violently thru into the room. At the first glance, Thorne as yet unseen, recognized the newcomer as his elder brother, Henry Dumont. Unlike the two famous brothers of the parable, these two loved each other.

Thorne's muscles relaxed, his hand still clutched the butt of his revolver, he was still alert, but here was not an enemy. He began at once to fathom something at least of the plan and the purpose of the people who had trapped him. In a flash he perceived that his enemies were not yet in possession of all the facts which would warrant them in laying hands upon him. He was suspected, but the final evidence upon which to turn suspicion into certainty was evidently lacking. He could feel, altho he could not see them, that every door and window had eyes solely for him, and that he was closely watched for some false move which would betray him. The plan for which he had ventured so much was still possible; he had not yet failed. His heart leaped in his breast. The clouds around his horizon lifted a little. There was yet a possibility that he could succeed, that he could carry out his part of the cunningly devised and desperate undertaking, the series of events of which this night and the telegraph office were to be the culmination.

A less cautious and a less resourceful man might have evinced some emotion, might have gone forward or spoken to the newcomer, would have at least done something to have attracted his attention, but save for that relaxation of the tension, which no one could by any possibility observe, Thorne stood motionless, silent, waiting; just as he might have stood and waited had

e been what he seemed and had the ewcomer been utterly unknown and ndifferent to him.

His brother was dressed in the blue niform of the United States; like the thers it had seen good service, but as horne glanced from his own clothes to hose of his brother, the blood came to is face, it was like seeing his own flag gain. For a fleeting moment he wished at he had on his own rightful unirm himself, and that he had never t it off for anything; but duty is t made up of wishes, gratified or unatified, and the thought passed as he atched the other man.

Henry Dumont had been thrust violntly into the room by the soldiers tside. He had been captured, as Arlsford had said, earlier in the day; had allowed himself to be taken. had been thrust into Libby Prison th dozens of prisoners taken in the me sortie. He had not been searched, t then none of the others had been; d he been selected for that unwonted munity alone it would have awaked his suspicions, but the Confedtes had made a show of great haste disposing of their prisoners, and had mised to search them in the morn. Therefore, Henry Dumont had rened the paper which later he had en Jonas, when by previous arrangent he made his daily visit to the son.

He had been greatly surprised, when ut a quarter to nine o'clock, a ad of soldiers had taken him from prison, had marched him hurriedly u the streets with which he was enly unfamiliar, and had taken him he residence section of the city, and halted at the back of a big house. had asked no questions, and no exnations had been vouchsafed to him. was more surprised than ever when was taken up to the porch, the win was opened, and he was thrust ently into a room, so violently that staggered and had some difficulty in vering his balance.

e made a quick inspection of the n. Thorne, in the deeper shadows he farther end of the room was inble to him. He stood motionless for the turning of his head as he ed around. He moved a few steps ard the end of the room, opposite entrance, passed by the far door ing into the back hall which was red with portieres, and went swiftoward the near door into the front . The door was slightly ajar, and e came within range of the opening aw in the shadows of the hall, sed bayonets and men. No escape way!

went on past the door toward the windows at the front of the e, and in another moment would been at the front window where ne stood. The latter dropped the in and stepped into the room.

r the thousandth part of a second wo brothers stared at each other, then in a fiercely intense voice, ne, playing his part, desperately d out:

Halt! You are a prisoner!''

th brothers were quick witted, knew that they were under the t observation, both realized that were expected to betray relation which would incriminate both, robably result fatally for one and inly ruin the plan. Thorne's cue to regard his brother as the er whom it was important to ar, and Dumont's cue was to regard brother as an enemy with whom it his duty to struggle. The minds of wo were made up instantly. With ick movement Dumont sought to his brother, but with a movement ly as rapid, Thorne leaped upon shouting again:

Halt, I say!''

The two men instantly grappled. It was no mimic struggle that they engaged in, either. They were of about equal hight and weight, if anything Thorne was the stronger, but this advantage was offset by the fact that he had been recently ill, and the two fought therefore on equal terms at first. It was a fierce, desperate grapple in which they met. As they struggled violently, both by a common impulse reeled toward that part of the room near the mantel which was farthest away from doors or windows, and where they would be the least likely to be overheard or to be more closely observed. As they fought together, Thorne called out again:

''Corporal of the Guard, here is your man! Corporal of the Guard, what are you doing?''

At that instant the two reeling bodies struck the wall next to the mantel with a fearful smash, and a chair that stood by was overturned by a quick movement on the part of Henry Dumont, who did not know his brother had already received the important message. In the confusion of the moment, he hissed in Thorne's ear:

''Attack tonight, plan 3, use telegraph! Did you get that?''

''Yes,'' answered Thorne, still keeping up the struggle.

''Good,'' said Dumont. ''They are watching us. Shoot me in the leg.''

''No, I can't do it,'' whispered Thorne.

All the while the two men were reeling and staggering and struggling against the wall and furniture. The encounter would have deceived the most suspicious.

''Shoot, shoot,'' said the elder.

''I can't shoot my own brother,'' the younger panted out.

''It is the only way to throw them off the scent,'' persisted Dumont.

''I won't do it,'' answered Thorne, and then he shouted again:

''Corporal of the Guard, I have your prisoner!''

''Let me go, damn you!'' roared Dumont furiously, making another desperate effort—''if you don't do it, I will,'' he added under his breath. ''Give me the revolver!''

''No, no, Harry,'' was the whispered reply, and ''Surrender, curse you!'' the shouted answer. ''You'll hurt yourself,'' he pleaded.

''I don't care,''' muttered Dumont. ''Let me have it.''

His hands slipped down from Thorne's shoulders and grasped the butt of the revolver. The two grappled for it fiercely, but the struggle was beginning to tell on Thorne, who was not yet in full possession of his physical vitality. His long illness had sapped his strength.

''Don't, don't, for God's sake!'' he whispered, and then shouted desperately, ''Here's your man, Corporal, what's the matter with you?''

''Give me that gun,'' said Dumont, and in spite of himself his voice rose again. There was nothing suspicious in the words, it was what he might have said had the battle been a real one; as he spoke by a more violent effort he wrenched the weapon from the holster and away from Thorne's detaining hand. The latter sought desperately to repossess himself of it.

''Look out, Harry! You'll hurt yourself,'' he implored, but the next moment by a superhuman effort Dumont threw him back. As Thorne staggered, Dumont turned the pistol on himself. Recovering himself with incredible swiftness, Thorne leaped at his brother, and the two figures went down together with a crash in the midst of which rang out the sharp report of the heavy service weapon. Instead of shooting himself harmlessly in the side, in the struggle Dumont had unfortunately shot himself thru the lung.

Not at first comprehending exactly what had happened, Thorne rose to his feet, took the revolver from the other's hand, and stood over the body of his mortally wounded brother, the awful anguish of his heart in his face. Fortunately, they were near the far end of the room, next the wall, and no one could see the look in Thorne's eyes or the distortion of his features in his horror.

''Harry!'' he whispered. ''My God, you have shot yourself!''

But Henry Dumont was past speaking. He simply smiled at his brother, and closed his eyes. The next instant the room was filled with light and sound. From every window and door people poured in; the soldiers from the porches, from the hall, Mrs. Varney, Arrelsford and Edith; from the other side of the hall a hubbub of screams and cries rose from behind the locked door where the sewing women sat. Martha brought up the rear with lights, which Arrelsford took from her hand and set on the table. The room was again brilliantly illuminated.

As they crowded thru the various entrances, their eyes fell upon Thorne. He was leaning nonchalantly against the table, his revolver in his hand, a look of absolute indifference upon his face. His acting was superb had they but known it. He could not betray himself now and make vain his brother's sublime act of self-sacrifice for the cause. There was a tumult of shouts and sudden cries:

''Where is he? What has he done? This way now!''

Most of those who entered had eyes only for the man lying upon the floor, blood welling darkly thru his blue shirt exposed by the opening of his coat, which had been torn apart in the struggle. Three people had eyes only for Thorne, the man who hated him, the girl who loved him, and the woman who suspected him. Between the soldiers and these three stood the Corporal of the Guard, representing, as it were, the impartial law.

Thorne did not glance once at the girl who loved him, or at the man who hated him, or at the woman who suspected him. He fixed his eyes upon the Corporal of the Guard.

''There's your prisoner, Corporal,'' he said calmly, without a break in his voice, altho such anguish possessed him as he had never before experienced and lived thru, but his control was absolutely perfect.

And his quiet words and quiet demeanor increased the hate of one man, and the suspicions of one woman, and the love and admiration of the other.

''There's your prisoner,'' he said, slipping his revolver slowly back into its holster. ''We had a bit of a struggle and I had to shoot him. Look out for him.''

(To be continued.)

''Ralph Darnley called again last night, Bessie, didn't he? You know, he's rather well off, so I hope you didn't treat him distantly,'' said mamma.

''Indeed I didn't, mamma. I was very much drawn to him—very much,'' she answered with a blush.—Tit-Bits.

''So you don't believe that truth is at the bottom of a well?'' asked the ready-made philosopher.

''No,'' replied Senator Sorghum, ''if it were, so many of us wouldn't have to climb a tree to get out of its reach.''—Washington Star.

Young Husband—What a glorious day! I could dare anything, face any thing, on a day like this.

Wife—Come on down to the milliner's.—Fliegende Blaetter.

PENNSYLVANIA FARMER CLUB LIST

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Chrisdan Herald	1 50	1 60	1 20
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PENNSYLVANIA FARMER, PHILADELPHIA, PA.

Grange

Conducted by R. P. Kester, Lecturer of Pennsylvania State Grange. Grange notes, queries, comments and news items invited from readers. Address all communications for this department to R. P. Kester, Grampian, Pa.

EDUCATING THE GRANGERS

According to articles which are appearing in some of the daily papers, the Pennsylvania State Highway Department intends starting a campaign of education to instruct grangers and other doubting Thomases of the advisability of voting for the amendment providing for a $50,000,000 bond issue for road building.

It might not be presumptuous to call attention to the fact that the grange has always stood for road improvement. In fact, it was the pioneer in the agitation for better roads, and its members are not so benighted as to need further enlightenment as to the advantage of good roads. But they are not convinced that the present plan is the right plan, or that it is necessary, in this great state of untold wealth, of partially-taxed property, to bond posterity to build roads. The process of enlightening in this state is evidently a slow business, for the grange has for years been endeavoring to enlighten lawmakers to the fact that we need equalization of taxes, that one-third of the wealth should not be compelled to pay two-thirds of the taxes. If this condition were remedied, we would have plenty of money to build roads.

Again, we are not sure that the art of building permanent roads for modern travel is yet acquired. They say that posterity will have use of the roads, and may rightfully be burdened with the bonds for construction. At the rate these costly roads wear out, posterity will have its own road problems. This opposition is not a matter of partisan prejudice, as is asserted.

GRANGE PRINCIPLES CONSTRUCTIVE

The grange stands for constructive, helpful effort. It is not simply an organization of protest. While it does stand unequivocally opposed to all forms of injustice, and the work of some of its members may be directed especially along this line, yet its principles and its history show its work thruout its 45 years' existence to have been remedial and constructive. It has learned that it is not enough to "arraign and condemn," but that it must also construct, propose and demand.

How much it has accomplished in this direction it is not my purpose now to recount, but a careful investigation will show that the greater part of the legislation helpful to agriculture in state and nation has been brought about thru the efforts of the grange.

But its efforts are not confined to the interests of the farmer alone. Since it stands for "a better manhood and a better womanhood," it has always lent its aid in any effort or proposed law that had for its purpose the bettering of opportunities and conditions for all men. It has made better farmers, better neighborhoods and better homes. It has developed a community spirit in many localities—something needed in every rural community, and without which no concerted action is possible.

These things are being accomplished. Yet how much better and faster, if all farmers who are receiving the benefits of grange work would become members and aid in the work.

SWEEPING THE COBWEBS OUT OF YOUR GRANGE

Just as the careful housewife renovates the family home after the stress of the long summer days of hard labor, and prepares her rooms and also her mind to enjoy the fruits of her labor, so the Lecturer of the subordinate grange who wishes to promote the welfare of the order to which he or she is affiliated must carefully go over the condition of her grange and remove the cobwebs and rusty spots which have been accumulating during the harvesting season, when the busy farmer and his wife, full of domestic cares and responsibilities necessary to complete the labors of the day, have been unable to attend the meetings or take part in the programs which have been prepared for the Lecture hour.

Several exceedingly gratifying reports have recently been received from secretaries of subordinate granges in Pennsylvania telling us that the interest and attendance in their granges have practically remained unchanged thruout the summer months, but this, I believe, is an exception and not the general state of affairs, and especially in localities where the grange membership extends over a wide expanse of territory. But now that the long winter evenings are again with us and the busy season of the year is drawing to a close, we should all stand in readiness to aid in the building up and strengthening of our grange meetings.

While the regular routine business session of the subordinate grange is of great importance in a well-conducted grange, we can not help but be impressed with the fact that it is with the program carried out at the Lecturer's hour that brings to us the real educational and social value of the grange. There is but one safe method of building up grange interests and attendance, and that is by the strength and worth of the literary programs, keeping steadily at it until the desired object has been attained. Everything possible that is attractive, and some things that may even be novel, can be introduced into the program, and the occasional dinner or supper is both right and proper.

A striking paper was recently read at one of the Pomona Grange meetings entitled, "Play in the Grange." The author stated that the grange has forged ahead, in some measure at least, because it has not overlooked the "play side" of human nature, and has sought to mix with the solid contributions afforded us in its gatherings something of a lighter vein, calculated to enliven and cheer. I believe this to be true, and I do not feel that I am belittling the important place which the literary program performs in our Order, when I advocate a mixture of stunts, contests, jokes, games, penny marches, charades, tableaux, spelling matches and entertainments, with an oft occurring "eat" of popcorn, chestnuts, peanuts, apples, etc. It is the duty of every one of us to enjoy life; it is the duty of every one of us to aid others to enjoy life. Then is it not the duty of the grange to present to its members the "play side" of rural existence and help to drive away the petty annoyances that overtake each and every one of us?

The avenues open to the Lecturers for building up the grange are indeed numerous. Henry Ward Beecher said that whenever one of his congregation went to sleep the sexton had orders to come around and wake up the minister. When the meetings of the grange at this time of the year become dull and uninteresting, I am inclined to believe that the Lecturer needs the sexton, and that it is time for him to take some means of arousing himself to action, as well as the other members of the Order.

The Lecturer of the grange is the medium thru which educational interests and social diversion must be brought to its members, and in order to keep in touch with, or abreast of, the progressive times he must be ever on the lookout for new ideas. He must keep informed in current events, in the progress being made along legislative lines most closely allied to the interests of the farmer, in the development of agricultural pursuits; in fact, he should be a reader and a student of no mean ability. No Lecturer can "make bricks without straws," and the knowledge of any one person can hardly be sufficient to create material for many interesting meetings without the aid of outside forces.

The Lecturers' Conference is being thoroly tested in the State of Pennsylvania, and is proving a great benefit to both Subordinate Lecturers and members. In Erie County they are held at the time of the quarterly Pomona meetings, allowing all fourth degree members the privilege of being present and taking part in the discussions, if they choose, and at all the conferences at which I have been present, they have voted it the most interesting session of the Pomona meeting.

It is the opportunity and duty of every Lecturer to plan to strengthen the grange by trying on every occasion to add new and desirable recruits to their organization. Do not expect that all your efforts will be appreciated. You will sometimes be unjustly criticised, but keep at it, smile on, work on and plan on—you are bound to win.

"Ef your runners strike bare ground,
Keep a-pullin';
Don't give up and don't go round,
Keep a-pullin'.
Wouldn't give a hoss his grain,
Ef he wouldn't break his chain.
Back up prompt, and pull again,
And keep a-pullin'."

—Mrs. W. D. Ripley, Erie Co., Pa.

MARKETING FARM PRODUCTS

There is a movement on foot to establish a Bureau of Markets in the Department of Agriculture at Washington. In order to have more light on the subject, Congress asked the Secretary of Agriculture to report on systems of marketing farm products and allied subjects, and this report has been submitted to Congress. The report treats of the movement of farm products to the markets thru a great variety of channels, deals with the intervention of middlemen, discusses the advantages of public markets, associative marketing by farmers, outlines the duties of a Division of Markets, as suggested, and closes with a recommendation concerning the participation of consumers in the solution of market problems.

One or two features of this report are worthy of special attention. Concerning co-operative marketing by farmers, the Secretary says that they must associate themselves together for the purpose of assembling their individual contributions of products, of shipping in carload lots, or obtaining market news and to secure the various other economic gains of associative selling. One might almost think that Secretary Wilson had a copy of the Declaration of Purposes of the National Grange before him when he wrote the above-quoted sentences. In the grange Declaration we find these words:

"We propose meeting together, talking together, working together, buying together, selling together, and in general acting together for our mutual protection and advancement as o sion may require. . . . For our b less interests we desire to bring p ducers and consumers, farmers manufacturers, into the most di and friendly relations possible. He we must dispense with a surplus middlemen, not that we are unfrie to them, but we do not need th Their surplus and their exactions minish our profits."

Then Secretary Wilson, to carry his suggestions, recommends "that Congress establish a Division of m kets, a corps of traveling field ag be maintained to assist farmers to f associations for marketing their p ucts." He would have these ag examine and remove local difficultie the way of co-operative marketing, port on the condition of crops, esti probable production, report the be ning and end of the shipping se and the crop movement to princ markets.

We are by no means opposing the tablishment of a Bureau of Markets Congress thinks it would help farmer and reduce the expense of ing. But we see no need of "trave field agents" or any other agents the farmers themselves, operating their local, county or state gran Here is an organization founded years ago to do the very thing Se tary Wilson now wishes to have d in another way. It is an organiza that already has its co-operative a ciations in many states which are ing just the things the secretary gests.

We admit that the grange has accomplished all it might or should this respect, and yet there are no few grange co-operative organiza that have saved thousands of dolla their members in recent years, with more intelligent ideas of w they want to accomplish, and by adoption of better business meth they will accomplish more in the fu They should rise to the occasion embrace the opportunities being fered as never before to help one others and to help all farmers, by sociative buying and selling.

The consumers' aspect of the di bution of farm products is a consp ous one at the present time, as the port well says. The consumer certa has something to do at his end of line to help lessen the cost of dist tion of the products of the farm. there is no way by which he can complish more than to buy co-op tively. There must be an elimina of some of the costs of distribution buying in larger quantities, and the intervention of as many in mediaries as possible. And just the grange may find a new fiel usefulness. With the parcel pos operation there can be direct com cation between farmers and city sumers, between granges and ind uals or collections of individuals, t mutual benefit of all concerned.—J Darrow, New York.

Grange Delegation.—The next York State Grange meeting at B will have 305 delegates, besides a most equal number of associates. basis of choosing delegates to the grange differs from some other s and requires a larger proporti membership in each county for delegate to the state body. A bu session of more than ordinary i tance is anticipated at the forthc meeting.

New Grange States.—Since when Idaho was admitted to the s hood of grange states, one new has been gained each year. These South Dakota in 1910, Nebrask 1911, and Montana in 1912. Wh two for 1913?

Veterinary

(Conducted by W. C. Fair, V. S.)

(Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full, also name and address of writer. Initials only will be published. When reply by mail is requested, it becomes private practice, and a fee of $1 must accompany the letter. This is one of the most valuable columns of the paper and we invite readers to make use of it. Clippings from this column, when properly preserved and classified, would make one of the most valuable medical symposiums [illegible]

Navicular Disease.—I have a mare, 13 years old, that is sore in both front feet and is lame in right. The right foot is considerably smaller than the left. The soreness has existed for the past 18 months. A. B. N. Bear Lake, Pa.—A recovery in this kind of a case is always doubtful, but you will obtain fairly good results by applying 1 part red iodide mercury and 10 parts cerate of cantharides to coronets, every week or 10 days. Apply lanolin to hoofs, once a day.

Contagious Abortion.—My cows are slinking their calves. The first cow lost her calf December 10. She was due February 1. The other one, a Jersey heifer, 2 years old, lost her calf December 18. She was due April 1. This being her first calf, and being a valuable heifer, I would like to know if it will pay to keep her for dairy purposes. Also, will she come to her milk all right? She gives a small quantity of milk at a milking, and I am keeping her away from the rest of the herd. Their feed has been corn fodder, good hay and chop with some salt added. What can I do to prevent the rest of the cows from slinking their calves? E. P., Cochranton, Pa.—First of all, contagious abortion is not easily gotten rid of. It is always good practice to remove the diseased from the healthy animals, use disinfectants freely about the stable and hind parts of the cows. When a cow aborts, every particle of afterbirth should be removed and the cow washed out with a normal salt solution, which is made by dissolving 14 drams of salt in 2 gals. of clean boiled water. When the uterus is filled and flushed with an antiseptic solution, it should be syphoned off, for if it is not it will cause the cow considerable uneasiness. There are other antiseptic solutions that are very good. An inexpensive one is made by dissolving 1 dram permanganate potash in 6 qts. of clean tepid water. Give your cows 40 grains of carbolic acid, or 40 drops, if it is in solution, at a dose, largely diluted and mixed with feed, once a day. You should continue washing out cows until vaginal discharge ceases. It is doubtful if it will pay you to keep heifer for dairy purposes.

Parasites in Liver.—We killed 4 hogs a short time ago. Their livers were covered with small yellow spots about ¼ of an inch in diameter. Upon examining more closely we found that each of these yellow spots contained small white worms, about ¼ of an inch in length. All of the 4 hogs were affected alike. We have 5 more hogs of the same litter yet to kill. Will these 5 be in the same condition as those that were slaughtered? The hogs that were killed were seemingly in a perfectly healthy condition and weighed 200 lbs. each. W. D. G., Chambersburg, Pa.—The liver containing these cysts with a few small worms in them does not affect the carcass for food purposes, if all other organs of the body were in a healthy condition. No doubt these livers became parasitic on account of the embryo being taken in with the food or water supply. Salt your hogs daily. The other five may or may not be in the condition of those you killed.

Coffin Joint Lameness.—I have a mare, 15 years old, that has been showing a little lameness in one fore foot occasionally for the past 3 years. I have thought she had rheumatism, but last week I drove her 14 miles over rough, frozen road and she became quite lame. On examination, I find considerable increased heat in lame foot. I shall look for a remedy in the veterinary column of Pennsylvania Farmer. E. B., Jasper, N. Y.—I am inclined to believe that the lameness is in coffin joint and that it is a chronic ailment. As she is so old, I have a doubt about her recovery. First of all, the foot should be kept moist, by either standing her in tepid water an hour or two a day, or apply wet swabs or apply lanolin to sole and wall of hoof, once a day. Also apply 1 part red iodide mercury and 8 parts cerate of cantharides to coronet, every week or 10 days. It is needless to say that she should be shod level, and perhaps a rubber pad would give her relief.

Bone Spavin.—I have a 12-year-old horse that has been troubled with bone spavin for past 18 months. The lameness has never entirely left him. A long drive or a fast drive seems to affect him. H. W. K., Mifflintown, Pa.—If blisters have failed you, you had better have a competent veterinarian fire your horse. Then give him 2 months absolute rest; that means absolute rest without exercise. By treating him in this manner he will perhaps recover, unless the hinge portion of joint is involved. In the latter case, a spavined horse never recovers.

Worms.—I have a horse, 8 years old, that is troubled with worms. He seems to have the small variety. I gave him injections of weak salt water, which brought away some pin worms, but as he does not rub his tail, I am inclined to believe he needs medicine. E. N. R., Andover, N. J.—Give your horse a teaspoonful ground nux vomica, a teaspoonful powdered sulphate iron, a teaspoonful sulfate iron, a teaspoonful powdered wormseed and a tablespoonful of salt, at a dose in feed, 3 times a day.

Indigestion—Parasitic Disease of Scalp.—We have an 8-year-old horse with good teeth and is well fed. He does not lay on flesh. He has always kept in good condition until lately. He has a very heavy mane, but scarcely no hair in tail. A. H. S., Cambridge Springs, Pa.—Give your horse ½ oz. Fowler's solution and 1 oz. ground gentian, at a dose in feed, 3 times a day. In addition to his grain, feed some roots and mixed hay. The scalp of tail contains a parasite; apply 1 part sulfur, ½ part corbonate potash and 6 parts vaseline, 2 or 3 times a week.

Pigs Have Worms.—I have a number of pigs that are troubled with worms, about 3 or 4 inches long. These pigs are about 6 months old, small for their age, rather scrubby and unhealthy. Two of them died and I opened them both; found the large intestines full of worms. I have given them worm medicine that is guaranteed to kill worms, but it failed on my hogs. D. N. C., Hatfield, Pa.—Mix together equal parts fluid extract of spigelia and fluid extract of senna, and give each pig 1 oz. at a dose every day until purging takes place, then give smaller doses, or discontinue its use for several days; then repeat. This remedy will kill the worms and not hurt your hogs.

Feeding Young Pigs.—I have two pigs, 3 months old, that I feed meal, milk and kitchen table scraps, but they are not growing and thriving as they should. I wish you would tell me what kind of grain to feed them. E. M. K., Grand Valley, Pa.—Give them each a teaspoonful ground gentian, at a dose in feed, twice daily. Feed them some ground corn, oats and middlings or bran. Feed them some roots, if you have them.

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Gasoline Is 3 Times Too Costly

In buying your farm engine, remember that gasoline has become terribly expensive, and you can't use anything in a gasoline engine BUT gasoline. In six months, the price of gasoline has nearly doubled. Still going up and up. You would not buy a horse that would eat ONLY OATS—WHY, then, buy an engine that uses ONLY ONE FUEL?

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Automobile users are fast exhausting the world's supply of gasoline. Hence the enormous and constantly increasing price. The 1,200,000 autoists in 1913 will use up almost HALF A BILLION GALLONS OF GASOLINE. Think how that will further push up the price!

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New Bulletins

(All Experiment Station bulletins are for free distribution in the states where issued. Most Stations will send bulletins free upon request to farmers outside of the state, unless the edition is limited.)

Winter Steer Feeding.—In experiments on steer feeding, the addition of corn silage to a fattening ration decreased the consumption of shelled corn in amounts approximating the grain content of the silage consumed by the cattle. The substitution of corn silage for clover hay in a ration of shelled corn, cottonseed meal and clover hay reduced the cost of gain $4.35 per hundred pounds and increased the profits $17.97 per steer. This and other valuable information on this subject may be found in Bulletin 163 of the Perdue Experiment Station, at Lafayette, Ind.

Triplet Calves.—In order that the question of the cause and reasons for triplet calves may be determined, the following problems must be studied: The physiological problem, the problem of sex determination, the problem of secondary sexual characters and certain problems of inheritance. The questions, all of great importance to the stockman, are discussed in Bulletin 204 of the Maine Experiment Station, at Orono, Me.

Hot Beds.—The Cornell Reading Course Bulletin 30, Series 1, gives an excellent outline for the construction and management of hot beds, together with many cuts illustrating beds in operation. Every farmer should have at least a few hot beds and cold frames on the farm, if they are only to provide fresh vegetables for the family. Commercially they can be made to yield good returns. Become familiar with this sort of gardening, and try it out on a small scale at first.

Moisture Control of Butter.—The melting point is not a correct index of the mechanical firmness of butter. Butter fat from Ayrshires and Holsteins contains less volatile acids and more olein and makes a softer butter than that from the Jerseys. Feeds rich in vegetable oils and bluegrass pasture produce butter fat relatively high in olein, low in volatile acids, and make a soft butter. This subject is discussed in Bulletin 159 of the Perdue Experiment Station, at Lafayette, Ind.

FARM JOBS WANTED

Among the winter-course students at the colleges of agriculture there are always a considerable number who wish to secure places on farms. There are nearly 600 students in the short courses at Cornell this winter, many of whom will be wanting farm positions at the close of the term, about February 14. The principal lines of study being followed by these students are general farming, dairy farming, horticulture, dairy manufacture and poultry raising. Some are mature persons with considerable experience along certain lines; others have little experience but desire to get more. Very few of them are married, or otherwise prepared to take farms on shares, but there is here an opportunity for farmers to obtain intelligent, ambitious young men who are training themselves for various lines of agriculture, and who are prepared to take positions involving various degrees of responsibility, depending upon the amount of previous experience. Farmers desiring to employ some of these persons should write to the College of Agriculture, at Ithaca, N. Y., stating definitely the kind of help they desire, whether farm superintendent, foreman, or farm helpers.

PENNSYLVANIA SOIL SURVEY

The report of the Reconnoissance Soil Survey of south-central Pennsylvania, recently made by the Bureau of Soils, in conjunction with the Pennsylvania State College, has been issued by Secretary Wilson. The area surveyed includes Clearfield, Cambria, Somerset, Bedford, Blair, Center, Huntingdon, Fulton Franklin, Adams, Cumberland, Perry Mifflin, Juniata, Union and Snyder counties, and comprises 10,908 square miles.

The report contains 77 printed pages of matter treating every phase of the agricultural side of the counties, such as drainage, transportation, climate and soils. Valuable suggestions for the improvement of the various soils of the county are made, and a map showing in detail the location of everything of consequence in the area relating to agriculture and the 18 different types of soils mapped during the survey, is annexed.

The report says, in part: "The soils vary greatly in fertility, those of the Hagerstown and Berks series being the most productive. All are subject to severe erosion, and nearly all are deficient in organic matter and lime. Several are well adapted to the production of fruits of various kinds. When well handled, most of the soils will give good results with general farm crops. Dairying can be made very profitable in some sections. Stock raising is the most profitable industry in the more remote sections, while gardening and trucking could be carried on profitably near the larger cities. There is ample room for improvement in all lines of farm work, tillage, fertilization and management."

PETROLEUM PRICES

A recent report of the United States Geological Survey shows a material advance in the price of petroleum during the year 1912. The average price per barrel on all grades was 96.3 cents at the close of the year, as compared with 68.6 at the beginning of the year. Advances in eastern grades are shown in the following table.

Kind of Oil.	Price per Barrel. Beginning of 1912.	Close of 1912.
Pennsylvania grade	$1.30	$2.00
Cabell, Pa.	.94	1.60
Mercer, Pa., black.....	.87	1.53
New Castle, Pa.	.84	1.53
Corning, Pa.	.77	1.53
Wooster, Ohio	....	1.53
North Lima, Ohio	.84	1.22
South Lima, Ohio	.79	1.17
Indiana	.79	1.17
Princeton, Ind.	.67	1.05
Somerset, Ky., 32 deg. B. and over	.74	1.15
Ragland, Ky.	.45	.65

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New York Potato Show.—A special feature of Farmers' Week at the New York College of Agriculture, February 10 to 15, will be a potato show. There will be prizes for exhibits in six classes and sweepstakes, open to all potato growers of the state, except professional showmen. Prizes will consist of agricultural implements especially adapted to potato growing. For full particulars, address Prof. E. R. Minns, College of Agriculture, Ithaca, N. Y.

Pennsylvania Suffrage Movement.—The Pennsylvania Woman Suffrage Association has opened headquarters at Harrisburg in preparation for a state wide campaign. Membership has been doubled in the past year.

Would a Sure and Steady Income Interest You?

Would you be willing to work hard for a few years to have it?

You have read of the splendid apple crops of the Pecos Valley of New Mexico and Texas. You have seen reports of the large profits. You know the results that can be secured by intelligent effort. You know these things, but have you ever sat down to analyze the advantages offered by the Pecos Valley?

Do you realize that most of the apples used in Texas come from this valley? Do you know that there are 4,000,000 people in Texas, all apple-hungry and willing to pay well for good fruit? Do you know that the Pecos has the nearest apple orchards?

Do you know that the Pecos Valley has a particularly favorable climate and soil for apple-growing? It is the nearest apple-growing country, and other apple sections are practically shut out of Texas by the long hauls and expense of transportation.

Do you know that the Pecos Valley has numerous irrigation projects, also artesian wells and abundant underground water, easily available by pumps?

The rich soil of the Pecos Valley responds generously and quickly to irrigation. The splendid climate and abundant sunshine put color and flavor into all crops.

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ESTABLISHED 1880
PUBLISHED WEEKLY
VOL. 33.—No. 4. PHILADELPHIA, PA., SATURDAY, JANUARY 25, 1913. 50 CENTS A YEAR.

Headle Dr. T J c13
Rutgers College

How a City Man Made Good---By The Country Parson

I wonder if the farmer realizes how much the attitude of the city dweller toward the country has changed during the past few years. Be the reason what it may, rapid transit, the automobile, the desire to escape from the heart-breaking monotony of of the daily factory grind and the crushing dullness of dead brick walls, the love of Nature is more and more filling the hearts of the American people. Having done our best to rob Nature of her greatest charm, the wonderful forests of this country, we are now voting millions for the establishment of forest reservations, city parks and city tree planting. If our city people can not go out into the suburbs, they plant a backyard garden; if they can not have a garden, they must have a window box or a house plant. If they wish to enjoy a vacation, they no longer go to a summer hotel at some fashionable watering place, but they rough it in the backwoods of Canada, as far as possible from newspapers, telephones and moving picture shows. The open has claimed us as a people.

It has dawned upon us that the farmer boy who stayed at home may not only have as much brains as his brother who came to the city, but that of the two he may actually have chosen the better portion. This changed attitude of mind is bound to have a prodigious influence upon the country and country life. It will express itself not only in the "back to the farm movement," but also in an increasing appreciation of the truth that the farmer has hitherto not been getting his share of the comforts and pleasures of life. It will raise the price of land, for most city dwellers frankly anxious to own a farm.

I saw this a few weeks ago in New York, where I happened to take lunch with the owner and managing editor of a widely-read weekly and two clergyman friends. The managing editor had just bought a farm in New Jersey. The owner of the paper was seriously thinking of buying a farm. One of the clergymen admitted that he had often desired to own one. Here were five city men at a chance meeting, each of them successful in his chosen profession, with all seriousness talking "farm."

True, some of these city men do not really want a farm. What they want is a "country place"—a sort of a costly plaything, worked by a manager who very often conducts it for his own advantage rather than the owner's. Now and then, however, you find a city man who has become a real farmer. I met such a one in Mr. C. Bosley Littig, who owns a farm of 225 acres in Harford County, Maryland. This farm came into Mr. Littig's possession some 12 years ago, and by judicious treatment it has been brought up from a woeful state of neglect to a fine condition of fertility and productiveness.

Mr. Littig's farm is what is popularly known in Harford County as a "white oak land." Judged by the soil map, published in 1901 by the Federal Bureau of Soils, it is a sassafras loam and a Susquehanna clay, the brown phase of which greatly resembles the Sassafras loam—"a fertile, durable soil, capable of being brought to a high stage of agricultural efficiency." It is especially suited for grain and grass crops. It does not grow corn and tobacco as well as the loams of the southern counties. One hundred acres of the farm had been cultivated; the remaining 125 acres were in timber, which had been cut over and permitted to grow up in second-growth forest, in which some fine trees, oaks, poplars, maples, chestnuts and sycamores still remained. The cleared fields slope gently to the south and east, and every foot of ground, while well drained, is sufficiently level to be worked with modern agricultural machinery. The farm has several springs, and a small stream makes its way thru the woodlot; but it was necessary to procure a water supply near the house and barns by driving wells.

This farm had been mismanaged and neglected for years. Young cedars, five or six feet high, grew beside the tumble-down fences out in the open fields, where they struggled with weeds and briars for the possession of what had once been productive soil. Heavy rains had washed the top soil from the gently sloping hill sides, and carried it into the lower grounds of the neighboring farms. Great ditches and gullies had been cut into the fields, and at one place the frightful erosion had formed a ravine into which a four horse team and wagon might be driven. The few remaining buildings and outhouses were of little value, and their tumble-down condition only added to the woe-begone appearance of the place.

When a city man attacks a problem of this kind he usually begins by erecting a handsome residence and barn. This city man took hold of things at the other end. Realizing that even a barn may be a somewhat useless thing if you have no crops to store in it, Mr. Littig directed all his energies toward crop production by restoring the fertility

THREE TONS OF CLOVER PER ACRE ON A RECLAIMED MARYLAND FARM.

THE CLOVER FIELD ON THE LITTIG FARM, HARFORD CO., MD.
Photo Taken July 12, 1912.

of his soil thru judicious application of plant food and energetic cultivation. As the lower fields gave promise of being most readily restored to productiveness, he began work at that point, clearing away the brush and plowing as deeply as possible—in some cases to the depth of eight inches. He was encouraged by finding a good subsoil, which gave assurance of holding any fertilizer applied instead of permitting it to leach away.

Upon this ground, Mr. Littig planted corn, using commercial fertilizer very freely; not with any expectation of raising a crop, but rather because the stiff soil needed work and cultivation. I think the application of fertilizer was a mistake. The soil was undoubtedly acid and needed lime, which would also have helped to increase the friability of the soil as well as secure a stand of clover, as attempted by Mr. Littig, who seeded it in the wheat which followed this crop of corn. As it was, the stand was thin and poor. A stand was finally secured, but only after further rotation and a free use of lime. This clover was cut for hay, and the field was then used for one season as a pasture for general stock. A repetition of this rotation with a liberal application of fertilizer and lime gradually improved the 24-acre field, so that it, in the season of 1912, produced not less than three tons of clover hay to the acre. Indeed, competent judges estimated the yield as being nearer four than three tons to the acre. The field, as it appeared July 12, with a part uncut and a part in cocks, is shown in the accompanying illustrations. The uncut clover is shown beaten down by heavy rains, and the weight of the crop may be better estimated by the picture which shows the cocks of hay almost covering the ground.

Mr. Littig now limes his corn ground as it comes in this rotation, working the lime into the ground while preparing the seed bed. The effect, both upon the corn and the clover which is seeded with the wheat, is marked. Burnt limestone, airslacked, has hitherto been used in preference to oyster-shell lime. Since ground magnesian limestone can now be purchased at a near market at $1.05 per ton, and ground oyster shells, which contain 95 percent of carbonate of lime, are now being sold near-by at $1.50 per ton, Mr. Littig will no doubt try these forms of calcium so highly recommended by Doctor Hopkins, of the University of Illinois, and Doctor Augustus Stabler, Chief of the Field Demonstration Work for Maryland.

Mention was made above of a field which had not been plowed for 18 years, and in which a great gully has been washed out by the rains. Its condition may be imagined. Instead of plowing and planting to corn, this field was first sown to cowpeas, with a liberal application of fertilizer. Here again, I think lime should have been used, for the acidity of the soil prevented bacterial action so essential for the growth of all nitrogen gathering plants. Despite the fertilizer, the cowpeas made but a puny, unsatisfactory growth. Six weeks of very dry weather turned them yellow, and it looked as if they would be a complete failure. Fortunately later rains helped them somewhat, and when the field was prepared for wheat, in the early fall, they had made a fair growth. After the cowpeas were plowed under and the ground prepared, two bushels of seed per acre were drilled with 250 pounds of high-grade fertilizer. Contrary to all expectations, this field grew about 25 bushels of wheat to the acre, with a good firm stand of heavy straw. A former tenant, who saw the field before it was cut, asked Mr. Littig in openmouthed wonder: "How did you do it? I never got such results." This was no doubt true, for the field had grown nothing but brush for 18 years. To my mind, a simple answer might have been given to his question. It was the long rest enjoyed by the fallow ground, together with the thoro working and consequent increased nitrification, together with the phosphate and potash contained in the two applications of fertilizer.

Clover and timothy had been sown in this wheat, but only a moderately fair catch was secured. The field needed calcium before it could grow grass. Still, it was cut for hay and pastured for one season, after which it was broken in spring, heavily limed and planted with corn. This was followed with the usual rotation, wheat used as a nurse crop for clover. Unfortunately, after a good stand had been secured, it became infected with the most virulent kind of dodder. The field was immediately broken and planted with corn for two successive seasons, energetically cultivated in order to get rid of the obnoxious weed. The attempt was successful, and the results of Mr. Littig's efforts toward its restoration were shown by a magnificent stand of timothy this year, despite the backwardness of the season.

The history of the other fields is similar to that of the "Spring Field" and the "Barrick Field," as described above. It is hardly necessary to say that Mr. Littig aims to use all hay, straw and fodder produced on the place, hauling out and spreading all manure as soon as made. He sums up the secret of his success in the following simple recipe: (1) Frequent crop rotation; (2) frequent cultivation; (3) liberal seeding; (4) topdressing grass fields; (5) using only the best fertilizers.

He considers bone too expensive. He therefore uses high-grade rock and good potash, together with lime, which is very liberally applied. Seed is most carefully selected and all seed corn is tested before planting.

While his farm is better adapted to the raising of grain, hay and stock than growing corn, Mr. Littig is nevertheless deeply interested in the great American feed crop. Besides taking prominent part in the organization of state corn special in 1905 and 1906, a movement which resulted in improving and increasing the corn yield of the entire state, he is now growing, on land which originally produced barely three or four barrels of corn per acre, an average yield of 12 barrels, or 60 bushels. While this is by no means a large yield, it must be admitted that the bringing up of a piece of land thru intelligent fertilization and crop rotation, so that it produces 12 barrels per acre where only three grew before, is something of an achievement. This yield will no doubt be increased, for neighboring farms, in a higher state of cultivation, easily produce 15 barrels per acre. Mr. Littig's efforts as a corn grower have been recognized by the agricultural experts of Maryland, for a sample of white corn exhibited by him at the State Horticultural Exhibit in 1911 was awarded fourth prize for the Western District.

It is interesting to note that the son of this city man who has become a real farmer shares his father's enthusiasm for soil restoration and progressive agriculture. Mr. Littig, Jr., has also exhibited, and a sample of wheat grown under his direction received second prize for the Eastern Zone at the National Corn Show, held at Columbus, Ohio, the first prize for this zone going to Pennsylvania.

The interesting feature of the whole story is this: Here is a city man who went back to the farm. Instead of spending his money on an expensive house, ornamental trees and pretentious flower beds, he got right down to the fundamentals—cultivation and fertilization. Patience and persistence, with a moderate use of money, won out, for Mr. Littig has made a farm out of a piece of abandoned, unproductive land. Incidentally, he has made himself what this country needs above everything else, a real farmer.

CONSERVATION OF AGRICULTURAL RESOURCES

(Paper read before meeting of Committee on Agricultural Resources by Prof H. A. Surface.)

I trust we can feel justified in looking upon this subject in its broadest scope, and thus regard as "agricultural resources" other features of the farm, as the farm life and the farmer's family.

We must regard the subjects of soil, soil fertility, soil moisture and soil purity as fundamental agricultural resources. There is serious need of directing the attention of our most thoughtful persons to these subjects. He who consumes the products of the soil without living upon the farm may not realize how important and how serious is the problem of the maintenance of soil fertility, and that on far the greater proportion of our farming area, the fertility is decreasing at an alarming rate.

This is indicated by the average yield of wheat, which has gradually decreased until now it is but 11½ bushels per acre. Farming is a business that should be upon a reliable basis. Water is necessary for the growing of all farm crops, but in a country of variable seasons as to rainfall, the farmer should not be obliged to depend upon summer rainfall for the perfection of his crops. He should be taught how to conserve soil moisture, by deeply plowing down the organic matter, and frequent shallow cultivation, thus utilizing the water of the spring rainfall.

Another subject worthy of our serious attention is the conservation of the soil purity. The disease germs of many plants, and even of animals, remain in the soil for years. A plant that is infected with such a disease as potato scab, black rot of cabbage, club root, and various other diseases, may contaminate the soil and leave therein the germs causing this disease, so that for years afterward, when the same kind of plant is again grown in this soil, it will, in turn, become infected, and yield but a poor crop.

To produce a crop and to market it are entirely different subjects, but selling or disposing of a crop is, in a broad sense, a part of production, for otherwise production would be useless. The majority of our farmers are trained practically in the methods of production, but not in the business methods of crop disposition. To be obliged to take time to peddle or retail their own crops means a loss of considerable time from the actual work of production. If means were devised by which the farmers' products would be directly put into the hands of the consumers, without loss on his part to find the market, as, for example, by farmers' co-operative stores, it would be to the financial benefit of both the consumer and the producer, and it would aid greatly in the development of the home market for home-grown goods, which are fresher and better than those that have been shipped or imported.

In conserving agricultural resources we should not forget the importance of preventing the loss of at least thirty millions of dollars annually in Pennsylvania by destructive insects, and probably fully as much by fungous diseases and other enemies of plants. The destruction of diseased plants, or parts of plants, by prompt burning, is as important as the destruction of the remains of diseased animals, to prevent the spread of the germs causing the loss. It will be greatly to the benefit of our rural people when we have legislation compelling the destruction of old, wild or seedling trees, that are the breeding places of insect pests and fungous diseases, and the proper spraying and otherwise caring for other trees and plants grown on the farm.

The spray pump, however, can not give permanent relief in checking the increasing numbers of destructive insects. We must conserve the life of the untamed insectivorous creatures. The constantly operating forces in the suppression of insects are the enemies of these pests, among which are fungous and bacterial diseases of insects, their internal and external parasites, predaceous insects, amphibians, reptiles, birds and mammals. Toads, frogs, salamanders, lizards, serpents, most birds and many mammals are insectivorous in habits, and when they were abundant in the country they rendered an important service in helping to preserve the crops by destroying their pests.

Among the chief factors destroying the farmers' crops are the rodents, such as rats and mice, which cause a loss in this state extending annually into millions of dollars. Attempts to destroy them by traps or other contrivances of mankind are but insignificant in returns. The chief means of suppressing them is by the preservation of their natural enemies, such as the hawks and owls.

To increase our yield of fruits, as well as to give honey for the food of mankind, bee keeping should be encouraged, and the honey bees should be preserved from the dreaded scourges of bee diseases, such as foul brood and black brood, that are annually destroying them in immense numbers in most of the counties of this state.

The farmers' finances are, in a broad sense, a portion of his products, and are essential to his prosperity and happiness. If a farmer can not earn and save enough money to live on the farm, we can not expect him to stay there. Why does the law deny him the privileges of borrowing money from our so-called National Banks, even upon the best of farm securities, and for the purpose of making still further farm improvements? Is it true that the taxes of the man who has invested his money in a farm are proportionately five times as great as those of the man who invests in other property than real estate? If this be true, is it just? Or why should this state of affairs exist?

The number of farmers in our country is great. What is their proportionate representation in our legislative halls and elective and appointive offices? Why should not the farmers have a full proportionate representation in the legislature? Can they expect legislation enacted solely in their interests by persons who are engaged in other professions?

It has well been said by thinking persons who have lived upon farms that one great objection to farm life is the drudgery, and another great objection is the isolation, involving seclusion and unsafety. The former is to be removed in part by the labor-saving devices, both on the farm and in the household, but how is the farmer to obtain and pay for these devices when, to my knowledge, and contrary to the popular opinion, the average farmer over this state does not have as much money at the end of the year as tho he had worked for days' wages. He can not borrow from his National Bank on any kind of a loan, even tho his farm is offered as security. How can he get money to buy labor-saving devices? It is not generally known that one tax collector may

get 7 percent and another 10 percent of the farmers' taxes. In one county the money paid to tax collectors to act as the middlemen between the farmers and the County Treasurer was over $10,000. When men were hired to collect delinquent taxes, not on commission, but on direct salary, the cost was but one-third of this amount, thus saving to the county the other two-thirds, or nearly $7,000. Would it not aid greatly in the conservation of the savings of the farmer to abandon the tax collector system, and provide for the payment of all taxes directly to the County treasurer, with returns thru the latter to the various townships, for school and road funds, where certain proportions respectively belong?

Farm drudgery is to a great extent relieved by teaching the farmer the sciences of what he is doing, that he may understand the reasons for the details of each respective kind of work. A knowledge of domestic science should help to brighten the housework by making the kitchen a laboratory instead of a place of drudgery.

Isolation is becoming less marked as the rural mail, the parcel post, the trolley and the telephone reach into the country, but even these are not sufficient to give that protection which is necessary for safety upon the farm. Perhaps bold robberies for the purpose of obtaining money would be considerably reduced if the farmers were taught to use banks or the postal saving fund thru the postoffice or rural carriers. If this were extended to every farmer it should help to increase the safety on the farm, because robbers would know that money is not kept in the houses.

A rural constabulary is needed for the protection of the agricultural interests. The writer hopes to see the day when the state recognizes the necessity of placing a brace of trained bloodhounds in every county seat, where they will be available for use for hunting down every crime perpetrated against the farmers and others. Legislation against trespass should be such as to make it possible for the farmer to arrest and identify the trespasser, instead of letting him pass on, as at present, or permitting him to escape because of lack of legal means of detaining him.

Unless intelligent young men and young women of the country are kept upon the farm we can not hope to see a continuation of the highest agricultural prosperity. Good graded schools and high schools teaching the sciences upon which agriculture is based should be available to the children of the farmer, and these, of course, should be in the country. The graded country school, made possible by the centralization of schools and the transportation of pupils, will help to solve the problem of not only keeping the country boys and girls at home while getting their education, but also in teaching them the sciences that are basis to the professions of their parents, and finally of keeping the youth on the farm.

CORN SELECTED FOR SEVEN YEARS RESULTED IN A PERMANENT HIGH YIELDING TYPE.

HOME MIXING OF FERTILIZERS

Much has been said about the value of mixing fertilizers at home rather than buying them already mixed, and that this is a good practice under certain conditions can not be disputed. There seems to be no reason for paying somebody to mix a brand of fertilizer for us, if we can do it for ourselves and just as cheap or cheaper. Fertilizers can be mixed at home with excellent results, but whether the finished product is cheaper than the commercially mixed kinds is a question which depends upon several points, namely, distance from railroads and local cost of commercial brands. It is safe to say, however, that no money will be lost in home mixing, and the fact of knowing exactly what is being used and in what form pays for a great deal of extra trouble.

The fact that home mixing is not practiced more in this state is probably due to the fact that most farmers either do not have, or think they do not have, the necessary knowledge to mix any given fertilizer formula as it should be done. But there are many problems that come up from day to day which are much harder of solution than this one of figuring fertilizer formulae. It is simply a matter of arithmetic. Suppose a 3-6-10 fertilizer was wanted, and the materials to be used are; Nitrate of soda containing 17 percent ammonia, acid phosphate containing 14 percent phosphoric acid, and sulfate of potash containing 14 percent potash. The figuring would be as follows:

Three percent of one ton is 60 lbs. The nitrate contains only 17-100ths of its weight of ammonia, hence to obtain 60 lbs. of ammonia we must use 60x100 divided by 17 (the equivalent in ammonia), or 353 lbs. of nitrate of soda.

Six percent of one ton is 120 lbs. The acid phosphate contains 14--100ths of its weight of available phosphoric acid, hence to obtain 120 lbs. we must use 120x100 divided by 14 (the equivalent in ammonia), or 857 lbs.

Ten percent of one ton is 200 lbs. Since the sulfate of potash contains 49-100ths of its weight of potash, to obtain 200 lbs. we must use 200x100 divided by 49 (the equivalent in ammonia), or 408 lbs.

Therefore, we have to mix 353 lbs. of nitrate of soda, 857 lbs. of acid phosphate, and 408 lbs. of sulfate of potash, or 1,618 lbs. altogether. Altho this is not a ton, it contains all of the plant food found in a ton of 3-6-10 fertilizer, and if an application of 1,000 lbs. per acre is desired, it can either be done by applying 809 lbs. of the above mixture, or 382 lbs. of "filler" may be added and then 1,000 lbs. of the product sown on the fields.

There are certain crops for which it is desirable to use one or more of the fertilizer ingredients in more than one form. This is more often the case in nitrogen, where the grower might want some part of it in a less available form than the other. For instance, in the above formula, supposing the nitrogen all being nitrate of soda, one-third was wanted as nitrate, another third as sulfate of ammonia, and another third as dried blood. This would be figured as follows: One percent of one ton is 20 lbs. To get 20 lbs. of ammonia from nitrate of soda, there must be used 20x100 divided by 17 (the equivalent in ammonia), or 111 lbs. of nitrate of soda. To get 20 lbs. of ammonia from sulfate of ammonia, there must be used 20x100 divided by 24 (or equivalent in ammonia), which is 83 lbs. of ammonium sulfate. To get 20 lbs. of ammonia from dried blood, there must be used 20x100 divided by 16 (equivalent in ammonia), which is 125 lbs. of dried blood.

Thus, in this case there are 319 lbs. of ammoniates which, in connection with the phosphoric acid and potash, gives above total 1,584 lbs. as a total weight. The dealers' price of the same fertilizer, compared with the cost of the raw materials, plus the labor involved in mixing, will show whether there is an actual money profit in home mixing.

It is to be strongly advised that home-mixed fertilizers should be used as soon as possible after mixing, in order to insure their being in a good mechanical condition when sown. If they are to be stored for any length of time, fine coal ashes may be used as a drier to absorb any moisture. When "fillers" are wanted, dust from a rich muck field will prove very satisfactory.

CHEAP ADVERTISING FOR THE FARMER

Advertising pays, and the farmer is awakening to the fact that it is the cheapest way to buy business. Many farmers are located in such a way that a sign board can do efficient service, and one of these farmers who is getting maximum results is Forrest Maloney, of Crawford Co., Pa.

His farm is located on a main traveled highway, in the midst of a small village of 15 or 20 houses. He has a blackboard, 2x3 feet in size, attached to the telephone in front of the house. Mr. Maloney says of his blackboard advertising that it has brought as efficient returns as insertions in the local paper, and at no cost. He says that he has sold horses, cows, poultry and seed potatoes and machinery from the board. He aims to have his announcement neatly written, and either rewrites or changes the announcement every few days, so it will appear fresh. When he has no stock or produce for sale, he advertises a line of farm remedies which he carries, and has been able to trace results to his billboard advertising which are quite surprising.—Walter Jack, Ashtabula Co., Ohio.

Feeding Stuffs.—The annual feeding stuffs inspection bulletin of the Station at Geneva is now distributed. This is becoming yearly larger and more thoro in its discussion of the feeds sold in the state; and the present one, No. 351, is a substantial pamphlet of 134 pages, of which 110 pages are devoted to the analyses of 772 samples (447 brands) collected by the agents of the Commissioner of Agriculture, and 20 pages to comments on these samples and other useful information relative to feed stuffs. Among the topics discussed are screenings and sand in feeds, composition of feeding stuffs with definitions of digestibility and nutritive ratio and tables showing the composition and digestion coefficients for most of the common concentrated feeds, pure and adulterated ground farm grain mixtures, retail prices, definitions of feeding stuffs and misuse of names.

This bulletin should be a helpful guide to every feeder in the state, and may be obtained without cost by writing to the station for it.

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Tickles the Boy because it makes a man of him—enables him to do a man's work with ease.

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containing 12 acres of strawberries, 8 acres of scarlet clover, 8 acres of rye and vetch, 10 acres young pine timber, that in a few years will pay the price of the farm, and 500 bearing Kieffer pear trees. Soil suitable for early truck, fruit and grain. 7 room colonial house and outbuildings. Situated 3 hours from Philadelphia and 1 mile from the thriving town of Bridgeville, which is noted for being the largest strawberry market in the world. This ad. will not appear again.

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Horticulture

FIGHTING THE INSECTS AND DISEASES OF THE APPLE IN NEW HAMPSHIRE

By Prof. W. H. Wolff, New Hampshire Experiment Station

The soils and climate of New Hampshire are such that we can and do produce apples of the best varieties in a high degree of perfection. This is vouched for by the good market reputation enjoyed by New Hampshire fruits, by an inspection of the state and country fruit shows in the fall of each year, and by the records of New Hampshire fruits in competition with that of other districts in the biennial New England Fruit Shows. Three years ago at this show New Hampshire grown Baldwins, together with several other varieties of apples, captured first premiums, and in 1911 the New Hampshire State Exhibit won the gold medal and highest award among state exhibits at Boston.

AN OLD APPLE TREE LOWERED ONE-HALF AT DEMONSTRATION TWO YEARS AGO.

Last Year Filled With Fancy Fruit to the Ground.

This high quality and high degree of perfection in apples is, however, produced in spite of many and serious parasites. First of all, let us consider the insect parasites. In addition to having the insects commonly found infesting the apple in most apple growing districts in the United States, we have here three very serious ones, foremost, perhaps, among which is the brown-tail moth. This insect was probably introduced into this country at Somerville, Mass., on nursery stock imported from Europe about 1890. It began to attract attention in Massachusetts about 1897, and has since spread over a large portion of New England, including all of New Hampshire south of the White Mountains. The eggs are laid in brown masses on the under side of the leaves of fruit and shade trees in July. Caterpillars hatch about the 10th of August, feed for a few deeks during the fall, when they form nests of silken webs and leaves on the tips of the twigs. In these nests the little caterpillars hibernate over winter, emerging as the buds open in spring, when, if uncontrolled, they eat the leaves and blossoms as fast as they appear.

The most efficient means of control and the one now being followed by nearly all of the best growers is to spray the trees with lead arsenate, about three pounds to 50 gallons of water, during the first week in August. This kills off the young caterpillars as quickly as they hatch. Another means of control afforded is by cutting and burning the winter nests, but since in doing this much valuable fruit bud bearing wood is removed it is not advised or being practices in orchard work, except as a last resort.

The gypsy moth also is a most serious pest of orchards in parts of New Hampshire. It was introduced accidentally in 1868, at Medford, Mass., and has been slowly spreading until it is to be found in each of the six New England States. The gypsy moth caterpillars are extremely voracious, attacking all fruit, shade and woodland trees, including both deciduous trees and evergreens. The most effective method of holding the insect in control is by coating the egg mass, during the winter or at any time from the time of their deposit, namely August, to the following May, with commercial creosote. This creosote is now kept by hardware stores thruout the country for this special purpose. It is applied with a dauber or brush to the egg masses found on the trunks and branches and in cavities. The caterpillars may be destroyed during the summer by spraying during May and early June with lead arsenate, but it is not safe, however, to depend on this, for they are quite resistant to arsenical poisons, and it is necessary to use as much as 10 to 11 pounds of the arsenate to 100 gallons of water in order to be sure of killing them.

Another insect with which orchardists are troubled here in New Hampshire is the railroad maggot, the larva or maggot of a fly resembling somewhat the smaller house fly. These flies begin to lay their eggs underneath the skin of the apple about the first week in July, continuing this work thruout the summer. Early and sweet apples are more susceptible to railroad maggots; notably so are Yellow Transparent, Sweet Bough, and Early Harvest and Porter. Occasionally winter fruit, such as Baldwin and Northern Spy, are infested, but usually this is true only where orchards of winter fruit contain large numbers of early or sweet varieties. The State Experiment Station has devoted much careful study to the life history of this insect, and as a result of this study and the printed literature concerning the pest, growers are now learning to control it. The remedy lies in destroying or getting rid of the dropped apples soon after they fall and before the maggots have a chance to emerge from them and enter the soil, there to form cocoons and begin their winter rest.

The San Jose scale is another insect commonly found infesting New Hampshire orchards in the southern counties of the state. It is a pest needing attention, but on account of the cooler summers and shorter breeding season, it is not quite so serious as it is further south. Growers are using lime-sulfur freely. The commercial grades are being used, and in some instances orchardists are making their own home-made preparation. A few have steam cooking plants ard are supplying not only themselves, but their neighbors with lime-sulfur at only a little advance on the cost. This spray, put on just after the buds are swelling in spring, controls another New England pest commonly found here, namely, the apple leaf blister mite, causing brown blisters on the under side of the leaves in midsummer and a subsequent loss of foliage. Peach growers also report the lime-sulfur spray, applied as above, a specific against peach leaf curl, which ordinarily does much damage.

The codling moth is also ever present here in New Hampshire. It is mostly single brooded, and so growers are finding that it can be readily controlled with only two arsenical sprayings. The first should be applied each season when the petals fall and a second three weeks later. Every wide-awake grower realizes the necessity of controlling the codling moth, and consequently is applying both of the above sprays. Lead arsenate is the material used, at the rate of from five to six pounds per 100 gallons. The fine mist type of spray is quite successful in this district.

New Hampshire orchardists also have full share of trouble fighting borers, apple curculio, tent caterpillars, fall web worms and many of the other insects to which the apple is heir. During the past summer there was an outbreak of green aphids in nearly all apple orchards of the state. The lice were extremely abundant, curling the leaves, checking the growths of young shoots and dwarfing the fruit. Naturally, many so-called remedies were tried, some of which, notably kerosene emulsion, often caused damage. After many tests, the Station is advising the use of commercial lime-sulfur at a strength of one part to 50 of water, or of nicotine sulfate, ½ pint to 50 gallons of water, to be applied when the lice first appear on the tender foliage in spring, to be repeated later if necessary.

Beside the above insect parasites, orchardists in New Hampshire have many and serious fungous troubles affecting the apple. Cankers of two or three different types are causing much damage, especially to apple trees on low, moist land. The Baldwin is notably susceptible, and in nearly every instance orchards poorly located are suffering. This emphasizes the importance here, as elsewhere, of placing orchards on sites with some elevation providing first-class air and soil drainage.

The fruit spot and Baldwin or "pit" are two quite common diseases seriously damaging the apple crop in New Hampshire. The first causes black or brown sunken depressions on the surface of the ripened fruit, and renders otherwise a first-class product fit only for the lower grades or culls. The second scarcely shows on the surface of the fruit, but appears as decaying spots, pits or lines thruout the flesh, resembling railroad maggot work. Fully 75 percent of all apples grown in southern New Hampshire are Baldwin, and, unfortunately, it appears more susceptible to both of these diseases than any other variety which we grow. The cause of the fruit spot is known to be a specific fungous, while the cause of the Baldwin pit has not yet been determined. The former is readily controlled by summer sprayings with bordeaux or dilute lime-sulfur; the Baldwin pit has not yet yielded to the ordinary fungicides, and in some sections is causing orchardists considerable concern.

Apple scab here, as in many other sections of the United States, is a troublesome fungous parasite. It is often serious on Baldwins and Greenings in New Hampshire, and it is bound to be of greater importance in the future, since the splendid variety, McIntosh Red, is extremely susceptible and is being quite freely planted in the new commercial orchards. The writer during the past two years has several times seen entire crops of McIntosh ruined by this fungous. Time and again, however, it has been thoroly demonstrated that careful, timely preventive sprayings will thoroly hold the disease in check, even on McIntosh and other like susceptible varieties. Growers are realizing this, and are preparing to carry out the necessary control measures.

The recent census shows that there are approximately 750,000 fewer apple trees in New Hampshire today then there were 10 years ago. Allowing for the new plantings during this same period, we readily see that close on to 1,000,000 trees have been lost during the past decade. This is clearly due to brown-tail and gypsy moths, tent caterpillars and other insects, to the canker and to winter killing, resulting from depleted vitality. We should not regret too deeply this loss of trees, even tho it apparently runs into such immense numbers. Many of the trees were old, they were in the hands of persons who knew little and cared less about them and almost forgot them, except at the harvest time, when they went with a basket and few barrels to gather in the remnants of the crops which the bugs and disease had left. Many again of these trees were unprofitable from their very nature, even in their best days. They were of many almost worthless varieties, scarcely known in the commercial market today. They were so high that picking and spraying could not be economically accomplished, and their arrangement about the old stone fences added to the difficulty and expense of such work. With the disappearance of these hundreds of unprofitable old trees there is surely springing up a new and a better horticulture, one which demands and is being fostered by better general education and technical knowledge relative to the art. As a result of this, orchards will be laid out most scientifically; they will receive better orchard management from the start; the yield will surely be increased, while the cost per unit of production will be kept down, and, best of all, in addition to this, owing to this better education and a co-operation among growers, a fair profit will be secured, which was often unattainable in the old days.

DURATION OF SEED GERMINATION

There are very few seeds that will not germinate as freely the second year as the first, if properly kept in a cool place, and not exposed to either a too drying or too damp atmosphere. With the exception of parsnips, onions and leeks, I would just as confidently sow seed two years old as when fresh gathered; but there is a limit to the vitality of seeds, varying much in the different families.

Among those only safe for two years are: Beans and peas of all kinds, peppers, carrot, corn, egg plant, okra, salsify, thyme, sage and rhubarb. Those safe for three years: Asparagus, endive, lettuce, parsley, spinach and radish. Those safe for five years: Broccoli, cauliflower, cabbage, celery and turnip. Those possessing the greatest vitality are: Beet, cucumber, melon, pumpkin, squash and tomato, the time ranging from six to ten years.

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THAT DISTRIBUTES ALL INSECTICIDES AND FUNGICIDES SIX ROWS AT A PASSAGE, AND
WITH ONE HORSE AND ONE MAN
covers THIRTY to FORTY ACRES a day, in the most thorough manner possible. It is Simple, Strong, Reliable, Durable and Practical—Not an experiment. Nearly 2,000 in use giving entire satisfaction. Don't buy any sprayer until you get our Catalogue giving full particulars and prices.
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edge very valuable; for example, in procuring the stock of a seed known to be good, of a variety that does not seed the season it is marketable, such as broccoli, cauliflower, cabbage or celery, enough is procured to last at least two seasons. The first season only a little is sown, to test the merit of the variety; if it proves valuable, we have enough in reserve to sow for a full crop, knowing that it is sure to germinate.

A frequent source of complaint is the fact of seeds failing to germinate during long continued dry weather, and it is very important that the gardener should always apply common sense to his work, and not simply follow routine, for what will suit for one condition of soil or atmosphere would be unnecessary or even wrong for another. I will give a case to illustrate: About the 5th of May, I sowed a large patch of open ground with celery seed and another with cabbage seed. The soil was in fine order, and the beds, after sowing, were raked—the celery with a fine steel rake, the cabbage with a large wooden rake, thus covering the seed of each to the regular depth. The weather was dry, with indications of its continuing so, and after sowing, both the cabbage and celery beds were rolled heavily, leaving, however, a strip of each unrolled, so that the result of this omission could be seen if dry weather continued. Had a heavy rain fallen within a day or two after sowing, it would have compacted the soil and produced the effect of rolling it. But we had no rain for three or four weeks, and a burning hot atmosphere, passing thru the shallow, loose covering of the seeds, shriveled and dried them up so that it was impossible for them to germinate. Our crop of cabbage and celery plants were as fine as need be on the rolled bed, while not one seed in a thousand of the celery, and not one in a hundred of the cabbage started in the strips where the soil was left loose. —T. A. Tefft, Chautauqua Co., N. Y.

ASPARAGUS RUST

Breeders and growers of asparagus are advised by the United States Department of Agriculture, thru Bulletin 263, Bureau of Plant Industry, to take up pedigree breeding and to use careful methods of production in order to keep rust from the plant.

On this subject the Bulletin says:

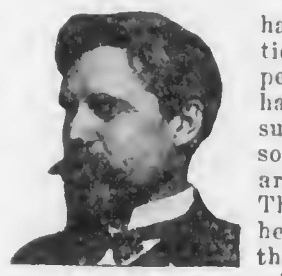
''Altho the breeding work carried on with asparagus will eventually lead to the control of rust in commercial plantings, several years must elapse before this result will become effective. Meanwhile it is necessary to take all measures practicable to prevent the destruction of existing fields of asparagus by the rust. To this end the main factor is to keep the rust away from the fields in summer just as long as possible.

''Wild asparagus growing around the borders of the fields, along fences and ditches is one of the worst enemies of the grower. These wild plants act as infection centers, and their influence can be easily traced later in the season when the cutting beds have grown up. Wild plants wherever found should be dug up and burned. New beds should be planted at only rare intervals of time, and then, if possible, where they will be to windward of a cutting bed. Keep the seedlings out of the cutting bed, at least let none stay in at the time the bed is allowed to grow up after the cutting season. Allow no poor shoots to grow up in the cutting field. Keep down every shoot of asparagus until the middle of June and see that the neighboring farmers do the same. In the fall the tops should be removed carefully from one-year-old beds that are not to be cut the next year. This will, in a large measure, reduce the liability of infection from this source.''

Horticultural Queries.

(Conducted by Prof. H. A. Surface, State Economic Zoologist. Address all queries to Pennsylvania Farmer, Philadelphia, Pa.)

Unthrifty Peach Trees



We would like to have some information about our peach trees. We had a big crop this summer, and now some of the trees are in bad shape. The trunks look healthy, and also the tops, but the middles look poor. Could you give us information as to what to do with them. We would like to have some information before we do any trimming. We wish to trim before long.—A. W. L., York Co., Pa.

I can say, first, that you were fortunate in having a big crop this summer. I have a large orchard, in fine condition, that has produced no fruit this year; however, the trees are in the best shape at this time of year for fruit production next year that I have ever seen.

I note that the trunks and tops of your trees look healthy but the middle looks poor. I do not understand this exactly, but presume that the branches are too long without fruit-bearing shoots between the trunk and the top. I recommend that you cut them back severely. You would do well to cut them back to stubs only a foot long from the trunk. If you do not wish to do this to each row, you can cut back every other row. Since they bore a heavy crop this year, they will probably not bear so heavily next year, and you will thus not have much loss of fruit by doing this.

Ripening Kieffer Pears

Will you please tell me how to get kieffer pears soft? Is there any way of treating them to get soft? Are there two kinds of kieffers? There was one given to me the other day that had no hard core, but was soft all thru. —T. A. W., Coatesville, Pa.

Keiffer pears are made soft by putting them in a dark place, and covering them with a blanket. I recently saw some of the best kieffer pears I ever ate that were nice and soft to the core and excellent for eating. They were ripened by putting them in a bin in a cellar and covering it. Let them become fairly ripe on the tree, then gather them and lay them away, and they will ripen up uniformly and be very good. The kieffer pear, when treated in this way, is so different from the same fruit just as taken from the tree that one would scarcely know it. While the kieffer has been greatly ridiculed because of its supposed inferior quality, I can assure you that for canning purposes, when properly ripened, it is excellent, and has its proper place.

Replying to your inquiry as to whether there are two kinds of kieffers, I can say that there is only one, but like all fruits of which one variety is cultivated extensively, there are variations toward one direction or another. Also the kieffers from young trees are quite different from those from old trees, yet if handled wrongly, as, for example, taken off the trees and sold at once, all are unsatisfactory and considered as inferior fruit; but if handled rightly and allowed to ripen, all are so much ''better than none'' that there is no comparison. It pays to grow a few kieffers for home use, as they will keep until the holidays and be very good then. This is, of course, at a time when most other pears are not available. It should be remembered that the chief value of the kieffer is as a cooked pear, rather than for dessert or eating raw.

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Poultry

GUINEA CULTURE

Guineas are becoming more and more popular each year. They are today one of the leading farm fowls. This is true because there is no better guard for hawks, thieves, etc., to be found than the guinea, with their quick, alarming cry.

There are several kinds of guineas, most of which are good, altho I think the pearl guinea, or the old-time speckled guinea more desirable. Very little is seen in the press regarding guineas, and as I find that a great many are taking them up with little knowledge as to their care, I will give a few pointers concerning the care, hatching and rearing of these valuable farm fowls.

The best time to set guinea eggs is in the months of July and August. They do better at this time because the dews are not so heavy, and another reason is that they will come off just about the time grass seeds begin to ripen. In my experience I find that the common hen is far better to hatch and rear the guineas than a guinea hen. As a rule, guinea eggs are very fertile, and require four weeks in which to hatch. They should be set on the ground in some cool dry place, where the water will not rise up under them. Care should be taken to keep the hen free from lice while she is setting, as lice or mites will kill a small guinea in a very short time.

A PROFITABLE MONTGOMERY CO. WHITE LEGHORN FARM.

After the guineas come off, they should be put in a good dry pen or coop. The coop should have a board bottom, so as to keep them dry, for dampness is very injurious to young guineas. It is best not to feed the guineas for about 24 hours after they are hatched. I find that the best feed for them is stale bread, boiled eggs or something of this kind, crumbled fine and dampened with milk. They should be fed this kind of food for four or five days, five times a day, after which they should be gradually worked onto grain and other foods. After this I feed them practically as I do little chicks.

The most critical time in a young guinea's life is when they begin to send out wing feathers. Especial care should be taken not to let them get wet during this time. Do not feed too much, and look out for bowel trouble. Another good thing is to look out for the lice and mites: If you should happen to find any lice or mites on them, a good way is to dust the hen thoroly every night, and clean out the coop thoroly with a good liquid louse killer. It is also a good plan to put a little lard on the heads and under the wings of the little guineas.

The young guineas are very lively and grow at a rapid rate. For the first few days they should be kept yarded, but after they get good and spry and the weather is good they should be allowed their freedom with the mother hen. Usually, after the hen weans them, they fly into some near-by tree to roost. After they are weaned they will pick up most of their living on grass seeds, bugs, insects, etc., but care should be taken that they get enough to eat.

During the winter they require about the same amount of food as an ordinary chicken. They do not lay during the winter, but begin about the middle of April or the fore part of May. They will lay nearly every day from that time until well into November.

Guineas may live to be several years of age, but are not as much profit after the second or third years as they were before they reached this age. Guinea eggs can readily be sold at a good price, and for a market fowl they bring a big price in the cities. If you are troubled with hawks and the like, you should try a pair of guineas.—A. E. Vandervort, Delaware Co., N. Y.

EXPERIENCE WITH FIRELESS BROODERS

Four years ago I purchased six outdoor brooders. They had been used considerable, and that season became infested with lice, which I found were very difficult to get rid of. The next season I tore out the whole inside of them and applied a good coating of hot whitewash and got rid of the lice. Three of the brooders I used for brood coops, and the others were made higher and used for colony houses.

Having heard much about fireless brooders, I thought I would give them a trial last season, so I took one of the old brooders which I had used for brood coops and converted it into a fireless brooder. In one-half of it, and about seven inches from the floor, I built a platform of matched one-half inch lumber. In the center of this I fastened the wire cylindrical chick-guard from one of the old brooders. Then I took one of the old circular hovers and tacked rows of slitted felt over its entire surface and about one inch apart. This was placed in position on the cylindrical chick-guard, as in the old brooder.

The holes in the top of the hover gave a good supply of ventilation. The other half of the brooder makes a good space for feeding and exercising. From this to the top of the platform is connected a runway, which is fixed on hinges, to close at night. This brooder proved very satisfactory; in fact, so satisfactory I am converting the other old brooders into fireless brooders.

The first brood I tried in it was a brood of 30 Leghorn chicks. They were hatched with hens, and after two or three days old were placed in the fireless brooder. I never saw chicks grow better, and I only lost one of the 30

In cold, damp weather, the hover is taken out and thoroly warmed, and also given a good sunning every day.—A. E. Vandervort, Delaware Co., N. Y.

WINTERING TURKEYS

Vigorous stock should have been reserved. It is a mistake to save the stunted individuals, just because they will not bring as much on the holiday market as you would wish. Get rid of them and keep only a few of the best. Birds at least a year old are more profitable than the young ones, and they increase in value for at least a couple of years. It is stated authoritatively that nine-tenths of the blackhead is traced to in-breeding. Vigorous stock and freedom from the disease mean profit, while the weakness resulting from a lack of new blood, added to disease germs passed down thru the generations, means loss.

Turkeys need no expensive poultry house. Even as far north as Rhode Island some of the most successful breeders allow the turkeys to roost in a tree. If the weather is so severe that they must have shelter, a shed on the south side of a building is much better than a closed building. But in most of the region of the Middle States, the tree suits better and is more healthful. Turkeys chafe under restraint of any sort, even when asleep. Pure air they will have, and the kindness which confines is real punishment. Some owners object to the tree, lest it stimulate rambling and they become a prey to various thieves, but if fed regularly there is little danger of winter roaming.

Turkeys will prove more prolific if not allowed to become over-fat. A ration of corn alone is for this reason objectionable. Corn mingled with wheat, and oats that have been boiled and then drained dry make a good combination. If the birds have access to the feeding ground of other stock, they will pick up much waste grain, and care must be taken not to supplement this with overfeeding. Grit, fresh water and charcoal are necessary at all times, the latter being easily obtained by charring corn.—Bessie L. Putnam, Crawford Co., Pa.

Maintaining a Poultry Standard.—The Peerless Farms, Long Island, have established a poultry practice which enables the managers to know at all times just what the flocks are doing, and thus maintain a high standard of utility. Every hen is rigidly trap nested thru her pullet year, and every one that fails to lay as many as 175 eggs is culled from the breeding pens. Next, every pullet is weighed on the day she lays her first egg and again at the end of the laying season. Everyone that begins laying under 3½ lbs., or fails to lay under 5 lbs., is discarded. Pullets are preferred that begin laying before 5½ months. Every bird admitted as a breeder must conform to the Standard of Perfection. An attractive illustrated leaflet will be sent free to interested readers. Address Peerless Farms, Northport, L. I., N. Y. Route 25.

Fence Bargains.—The new 1913 catalog of the Brown Fence Co. tells all the facts concerning construction, cost, selling plan, etc., of the famous Brown fence. This fence is sold direct from factory, all freight prepaid wherever you live, and at exceedingly low prices. A postal will bring the catalog. Address Brown Fence & Wire Co., Dept. 121, Cleveland, Ohio.

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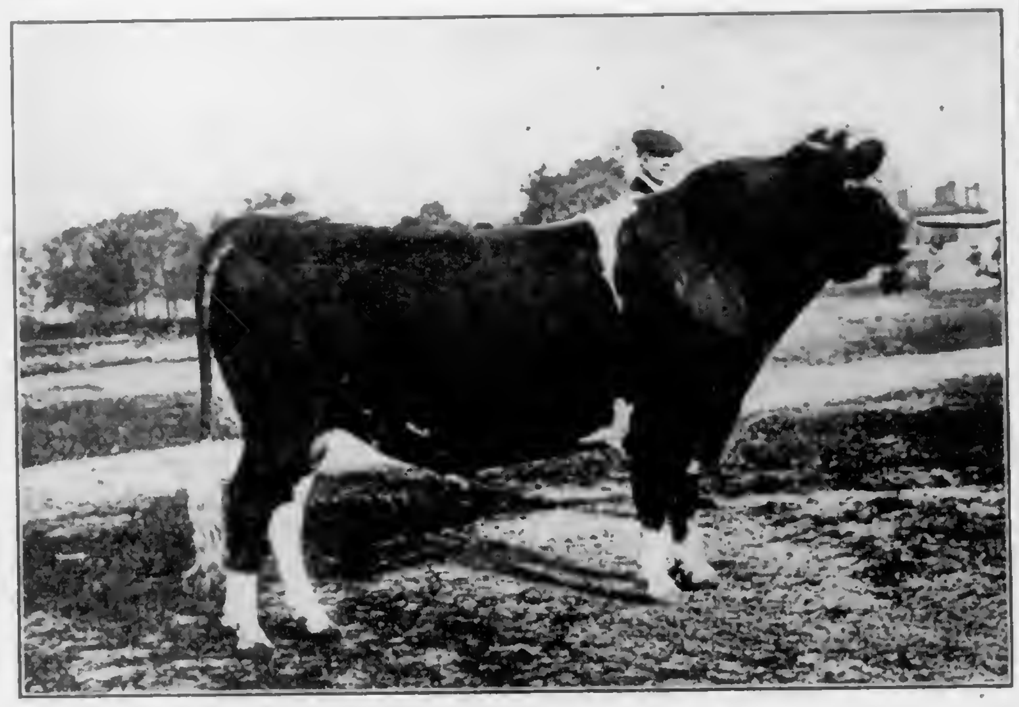
The Dairy

CO-OPERATIVE MILK BUYING

A Lancaster, Pa., citizen submits the following plan for city consumers of milk to buy it directly from the producers, and asks criticism of it:

"Take a built-up section of the city. The four sides of each square will have about 100 families to the square. A corner of this square faces three other squares, bringing 400 families within easy distance of each other. These families, at a low estimate, will consume 500 quarts of milk a day. They will consume much more if milk is of good quality and can be bought at a reasonable price. At one of the central corners, let these 400 families rent a house and give it rent free to a caretaker of a milk station. Farmers are now delivering milk to city dealers at four cents a quart. It should be an easy matter to buy 500 quarts delivered to this corner store. Let all consumers furnish their own containers and carry their own milk from the station.



IMP. RAYMOND OF GREENWAY 14608.

Grand Champion Guernsey at Trenton Inter-State Fair, 1912. Owned by Bedminster Farms, Somerset Co., N. J.

"It appears to me this is a good business proposition, and is one in which the consumer, who is now making himself unhappy by brooding over his existence expenses, is doing something worth while for his own relief. I think this is a work which we must do ourselves, and not expect to be done for us by charitable institutions or laws or any other outside agency. All other farm products required by the city family could and would eventually follow this line of least resistance, and the benefits would flow equally between the producer and the consumer."

It seems to me, as I see it, that this is exactly the thing for the city consumers to set in motion, by organizing, being loyal to the organization and each work for the good of the whole. I will say, however, that if dairymen are delivering good, clean milk to the dealers of Lancaster at four cents a quart, they are doing it too cheaply; indeed, I should say at an actual loss. Of course, this need be no concern of the consumers, who are by all trade rules justified in buying as cheaply as possible. But even farmers in time grow tired of doing a lot of hard, expensive work at no profit, and will ultimately have enough worm attributes "to turn."

It may be a matter of surprise to this city friend to be thus assured that all existing farm operations, conditions and prices are not simply running over with profits to the fortunate farmer. This urban idea of farming affairs has grown from the feeding it gets from various uninformed published statements regarding the business of farming; and if the dairymen are supplying the Lancaster dealers with milk at four cents a quart, it is only a question of time when they will quit it by sheer losses sustained Feeds, cows, labor, everything entering into milk production can no longer be put in the class of four-cent milk.

But the co-operative plan is absolutely right. Let the city consumer, as suggested, take up the work there as his problem for his solution. Let there be a cohesive organization, large enough and straightforward enough to give it strength and character. Make all advances to the producer as one business man to another. Cut out all sharp practices. Let the seller have advance assurance that his money is safe and shall come to him by the week or month, as agreed upon. Give him security to bind the buyer and make the seller safe if he demands it.

It is obvious that the producing dairyman, with his multitude of farm duties and heavy farm expenses, can not deliver his milk or other products from house to house—a few customers in this square and a few in the next, back and forth, up and down, and do it as cheaply as the organized city dealer is now doing it. Generally the laborer is worthy of his hire. He is at least an essential and indispensible factor in our present cumbersome and expensive plan of food distribution. But your city organization, efficient and loyal and almost automatic, does this terminal storage and distribution work, and the profits in money and the moral force that grows to those who help themselves accrues to you.

We farmers in Lancaster County have a co-operative association, having over 1,200 members, practically covering the entire county. We are doing very satisfactory co-operative buying of such large things as fertilizers and feeds by the thousands of tons, and many other things, such as machinery, fencing, harness and the like. We are doing a little co-operative selling, but to do that extensively involves our maintaining expensive and uncertain market connections. We do not expect to arbitrarily set prices, but we do want more of the consumer's dollar, and think we are justified to holding on to our share of our own. This is our end. The city is your end. The consumer's dollar to us is your dollar to you. You want to spend no more of it than circumstances of equitable economies require. You, having to spend it, we want our full, undiscounted share of it. We are organized and are ready to entertain your organized proposition, or make ours to you.

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If this plan, when well under way, should put some few city dealers out of business, let them return again to the broad fields where laborers are far too few, and try their hands at the tasks of the producer, earning their bread in the sweat of their faces. You are everlastingly on the right track. Go ahead.—W. F. McSparran, Lancaster Co., Pa.

WINTER HINTS IN THE DAIRY

Cows should continue to milk up to within two months of freshening. Some cows are difficult to dry up. This class is, however, altogether too few, but they are better for having a rest. They will give more milk when they freshen, and you will have a stronger and more vigorous calf. From six to eight weeks before the cow is expected to come in, she should not be fed much grain, especially much corn meal or any heavy grain that is likely to cause a feverish condition at the time of calving. Bran is a safe feed, or oat chop, if not fed too heavily. Cows are better to freshen in the stable at all seasons of the year. A loose box stall, well bedded, should be provided for them, and it is a good practice to give them a pound of Epsom salts about 24 hours before you expect the calf. At this time great care must be taken that the cows do not catch cold, and in cold weather it is always safer to blanket them for 24 hours after calving.

One of the worst risks that the dairyman has to contend with it what is commonly called milk fever. This disease, which used to be so fatal, has now largely lost its terrors, as since the oxygen or air treatment has been discovered there is no danger of a cow dying, if proper steps are taken within a reasonable time. The treatment is simple and consists in pumping the cow's udder full of air. It is better to get a veterinary surgeon to do this, if one is available. If not, get a bicycle pump and a milking tube. Sterilize the milking tube and attach the air pump and fill the udder with air. Massage and fill again. Do not attempt to give medicine, as in this disease the throat is paralyzed and the cow can not swallow. The dairyman who has valuable cows in his herd should have a milk-fever outfit. They are cheap and may be the means of saving valuable animals.

To attain success in dairying it is not only necessary to have good cows, but we must feed them economically in order to make money. It is not difficult to get large flows of milk from our cows if we do it regardless of cost, so the dairyman must endeavor to grow most of his own feed. Fortunately, there are two foods which most of us can grow on the farm if we go about it in the right way. These foods are corn and alfalfa or clover. The former is well known, and no up-to-date dairyman tries to get along without a good supply of corn. There are a good many, however, that are not getting out of their corn crop what they should, from the fact that they have no silos. Alfalfa is still grown only to a limited extent, but the sooner farmers know its advantages the better for them. With good ensilage and alfalfa, cows can be kept up to a good flow of milk with very little grain. There is no single feed that will give as good results as alfalfa. It will pay every dairyman to go to some expense to have water put into his stables, so that his cows can get it when they want it. The salting of cows is another thing that is often neglected. Cows should have access to salt every day. It is a good plan to sprinkle a little on their feed, but not an excessive amount, as some cows require but little salt.

A most important thing in the building up of a profitable dairy herd is the weighing of the cow's milk. We may breed as well as we can, and still there will be some cows that will not be profitable, and the final test is with the scale and Babcock's tester. A dairyman should fix a standard for his cows—6,000 pounds of milk in a milking year is not too high—and any cow that will not give that amount will not give large profits, and the sooner she is out of existence the better. The daily weighing of the cows' milk is very little trouble, and the time it takes is not worth mentioning. After a man once tries it, he will become more interested in the individual cows in his herd. He will also become a better feeder. He will, in fact, become a dairyman in the true sense. He will put more business into his dairying, and will consequently make more money.

A man must be careful not to condemn his cows without giving them a fair chance to see what they are capable of doing, as there are more good cows in the country than good feeders. One of the reasons why dairying does not give better results is that many farmers never provide any soiling crops to carry their cows over a drouth in the summer. This is a matter that should never be neglected, for if the crop is not required during the summer, it can always be made into hay for the coming winter.—William Hardy, Illinois.

GOOD TIDINGS TO MILK CONSUMERS

A wonderful change is coming in the minds and methods of milk producers as to the necessity for clean, wholesome milk. A few years ago the man who espoused the cause of sanitary stables and proper methods of handling and shipping milk was viewed as visionary and extravagant, if not a meddler and imposter.

In recent farmers' institutes it was my pleasure to hear Dr. M. E. Conard, of York County, Pa., as he daily treated this and kindred subjects in plain English, and all was well received. The fact is that farmers are being led by a few progressives, found in every vicinity, who voluntarily make the conditions of the dairy plant right, and the reward follows in a premium price for the product. The deep satisfaction and pride in the ownership of a plant that is turning out a product that is a blessing is also worth while.

This willingness and ability to meet the demand of the best trade is not yet universal, but surely there is a marked improvement. One dairyman near a city market informed me that he has been offered 28 cents per gallon for the output of a dairy not to exceed 200 cows. In contrast to this alluring offer is a dairy, the product of which has no value as human food, the difference being in the proprietors.—D. H. Watts, Clearfield Co., Pa.

AN APPRECIATION

After a lapse of several weeks, I wish to again congratulate you on the good work you are doing, by giving the farmers an up-to-date, all around agricultural paper. Altho I have been much interested in political movements and read many of the leading political papers, not a week has passed that I have not given Pennsylvania Farmer a thoro perusal. Do not think that I have missed any of the good points that you have made; and in talking with others who read your paper, I find that they are of the same opinion, namely, that you have reached the enviable position of marching in the front rank with those who represent the most important industry of the world. With the compliments of the season, I am, yours truly., W. R. McGill, Meadville, Pa.

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PROFIT FEED ROUGHAGE LABOR — PROFIT Larro-feed ROUGHAGE LABOR
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The pail at the right shows how much MORE PROFIT there is left for you after you have paid for the labor, hay and LARRO-FEED even tho' this high-producing feed costs you a trifle more than the ordinary kind. The comparisons we show in the two pails are based upon actual results reported from hundreds of dairymen who have already tried LARRO-FEED. We tell you frankly that LARRO-FEED costs a little more per ton than ordinary feeds, but we also stand ready to prove to you at our risk that it will produce enough more milk from your cows to offset the difference in cost of the feeds several times over. Based on results LARRO-FEED is the CHEAPEST feed you can buy and we will prove it in your own dairy or no pay.
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Here is the Proof
Get as many sacks of LARRO-FEED as you need from your dealer. Feed one sack (100 lbs.) at our risk—watch results. If LARRO-FEED doesn't satisfy and please YOU (we tie no strings to our offer) take back the unused sacks and get your money back in full. Every dealer handling LARRO-FEED is authorized to make sales on this broad guarantee. The burden of proof is on us; if LARRO-FEED wins we both gain, if it does not you are not out one penny. Try it NOW.
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Established 1880. Published Every Saturday.
Entered as second-class matter at the postoffice at Philadelphia, Penna.

The Lawrence Publishing Co., Proprietors
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214-216-218 South 12th St., Philadelphia, Pa.

Branch Offices For Advertising Only
Cleveland, O., 1011-1015 Oregon Ave.
New York City, 41 Park Row
Chicago, Ill., 600 First Nat'l Bank Building
Detroit, Mich., 39-45 Congress St., W.

TERMS OF SUBSCRIPTION

One Year	52	copies	to	one	person	$0.50
Two Years	104	"	"	"	"	$1.00
Three Years	156	"	"	"	"	$1.25
Five Years	260	"	"	"	"	$2.00

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15 cents per agate-line measurement, or $2.10 per inch (14 lines per inch) each insertion.

No advertisement inserted for less than 45 cents per insertion.

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Philadelphia, Pa., January 25, 1913.

THE VALUE OF A NAME

Did you ever notice that advertised goods are always sold by name, whereas non-advertised goods are usually offered with the name of the dealer only? For instance, shoes, clothing, buggies and scores of other commodities are marked only with the dealer's name.

Who protects you when you buy nameless goods? The dealer? Perhaps, but when you complain to him about a purchase being unsatisfactory, does he take back the article and refund your money promptly? Not unless he is a very great exception, for the usual method is to tell you that he will write the jobber about it. Then the jobber writes the manufacturer, and what satisfaction do you get? More often than not you are left to hold the bag.

And what is the remedy? Buy advertised goods. Read the advertising columns of reliable publications such as Pennsylvania Farmer. Make the advertising columns your market place. These columns are carefully edited for you.

The manufacturer who advertises can not afford to vary the quality of his product, because he usually depends on "repeat orders" for his legitimate profits. You can rely absolutely on the general advertiser backing up his advertising with a dependable product.

It is to your advantage to demand goods that have a trade mark. This is a protection to you.

EFFICIENCY OF IMPEACHMENT

The conviction of Judge Robert W. Archbold, of the United States Commerce Court, on January 13, is of particular interest as an example of the working of the impeachment provision of the federal constitution. The soundness of the charges preferred against the judge appeared to be so well established in the early investigation that there was little doubt in the minds of the public as to what the verdict ought to be. What doubt there was as to what it would be was based upon the speculation as to the limits of senatorial courtesy and fraternalism in public office rather than on the merits of the case. The overwhelming vote of 68 to 5 for conviction on the first charge ought to be gratifying as an evidence of a higher standard of senatorial obligation to duty. It would indicate that the Senate voted as it believed, and as a common jury would vote in a civil suit. It is in commendable contrast to the attitude of that body in the Lorimer case. The fact that Senators Penrose and Oliver, of Pennsylvania, were among the lonesome five who voted against conviction may be credited to senatorial courtesy extended to an official of their own state, or to whatever other reason these men may care to advance. Their associates were Burnham, of New Hampshire, and Paynter, of Kentucky, who have forsaken hope of re-election, and Catron, of New Mexico. The public may be so well pleased with the general result that it will give little thought to the motives of the lone five. The recent agitation in favor of the recall adds interest to the present case, if it does not help explain the unanimity and dispatch in the Archbold verdict. The opponents of the recall policy have been urging the efficiency and sufficiency of the impeachment power. The fact that only two convictions had ever been secured under impeachment previous to the Archbold case has led many to demand a more certain means of removing offending officials. The rather long list of contested elections in the Senate, and the inevitable delay and confusion in the trial of such cases by Congress has increased the demand for the recall. The Archbold verdict is now put forward by the advocates of so-called constitutionalism as a refutation of the need of the recall. Were every case handled as expeditiously and as seriously as this case was, the argument might stand. But in weighing the value of this case as an evidence of the efficiency of impeachment it will be well to bear in mind that it is only the third conviction ever secured under that power, that it was a case of flagrant offence in public office, that it removed a judge who was in danger of having his position annulled by early legislation, that the facts of the case were widely circulated, and that an example was required to still the growing demand for the recall.

A PROTECTIVE LAW

The blue-sky law of Kansas is a splendid application in state legislation of the old adage that an ounce of prevention is worth more than a pound of cure. Other states punish fraudulent stock promoters after the fraud has been perpetrated and the victims fleeced. Other states may spend large sums of money to convict and punish such promoters as they are able to capture, but in the meantime the victims have lost their money and are suffering the consequences. The blue-sky law of Kansas not only provides the lock before the horse is stolen, but it sees to it that the lock is in place and firmly secured. It makes the state banking commission the supervising body, with authority to investigate the financial and legal standing of every person or corporation which seeks to sell stocks or bonds in the state. This commission issues certificates to those which are considered safe, and the rest are compelled to quit business or move on to other states not so well protected. The biennial report of the commission was recently published, showing the operation of the law during the first 20 months of its existence. During that time about 1,500 corporations applied for certificates to sell stocks and bonds in mining, oil, gas and other companies. Of this number only 97 succeeded in securing permits. Some of the corporations refused certificates showed, on investigation, to be offering stock which presented about two chances in a hundred to pay. Others showed fair prospects, if every condition was favorable, but were admitted risks under normal conditions. Some were proved to be purely frauds, with every chance against the investor. It is estimated that the law has saved investors of the state not less than $5,000,000 in the time it has been in force. The law has been enforced at an operating cost that is purely nominal, and all legitimate opposition to it has been removed since it was enacted. Bankers and brokers in legitimate stocks and bonds are behind the law, as they see its advantages to them as well as to the public. There are no means of estimating what such a law would mean to our eastern states, but there is no question that it would save many thousands of dollars now being lost in hopeless investments, and divert that money into needed, legitimate development work. The Kansas blue-sky law should be copied in every state.

THE GLAMOR OF CRIME

Do the American people place a premium on a criminal record? During the past summer a police scandal in New York City brought out evidence of a condition of lawlessness and crime in that city which might have shamed the civilization of the tenth century. Five men were convicted of murder. The testimony was that of confessed gamblers and thieves. It recited the story of graft, robbery and murder in a cold-blooded manner, indicating that these were every-day occurrences. It told of dens of vice operated under the protection of the police; of hired assassins who took human life for a few paltry dollars. The whole case reeked of the slime and filth of the so-called underworld, and exposed a condition which should have brought shame to the heart of every citizen. As a mere matter of decency, the public should have demanded that the awful conditions be immediately cleaned up and placed under a police supervision which actually supervised and civilized. If this was impossible, the people should at least demand that the testimony be kept out of the public press and out of reach of the youthful readers, whose minds and imaginations might be excited and contaminated by this record of crime. If public opinion has any moral value, it should at least mark the participants in such a record with no uncertain mark of public disapproval. But does it? The principal witness in this case was a confessed gambler and boon companion of the lowest type of criminal. He turned state's evidence to escape punishment. His familiarity with the accused criminals, and his experience in the world of crime, enabled him to give testimony which convicted his former associates. The granting of immunity to confessed criminals who turn state's evidence may be excusable on the ground of expediency, but certainly the public need not be expected to mitigate the guilt. The fact that a man satisfies the law by confessing his own guilt to enforce the punishment of others, in no way diminishes his crime against the public and the public's laws. Yet no sooner was this case completed than this witness was reported to have received offers from theatrical agents seeking to engage him as an "attraction" for their theatrical circuits. His visit to a neighboring city was heralded in the daily press, and the fact that he stopped at the most aristocratic and exclusive hotel in the city was made the feature of their reports. At present he is engaged by a large publicity syndicate to write the story of his life and experiences in the underworld as a special feature for the Sunday supplements of a large number of daily papers. This self-confessed criminal is exploiting his record and that of his companions in the homes of thousands of readers, and receiving a large salary for doing so. He is set up as a hero, a "bad man" with a record, who glorifies in his lawlessness and expects the public to do the same. And the blame is not that of the papers or the theatres. They are giving the people what the people want. They know they can sell this man's story, because the people gladly pay their money to secure it. It is this attitude of the public which makes the hero of the criminal, excites the young mind to crime, and makes recruits for the underworld.

PROFESSOR WORTHEN SUCCEEDS PROFESSOR SHAW

Mr. E. L. Worthen, Agronomist in Soils to the North Carolina Department of Agriculture and Experiment Station, came to State College, January 1st, to fill the position of Assistant Professor of Agronomy, made vacant by the resignation of Professor Shaw. Professor Worthen was born and reared on a farm, took his Bachelor's Degree in Agriculture from the University of Illinois, and his Master's Degree from Cornell University. He comes to the Pennsylvania State College with eight years of experience in Scientific Agronomy, specializing along the lines of soils, which will be his specialty in State College.

STATE CAPITAL NEWS

Stocks and Bonds.—A subject which is certain to occupy the attention of the legislature this winter, and for which a popular demand is apparent, is the regulation of stock and bond issues and their sale. Political platforms are committed to enactment of laws to protect investors, the general plan of the Kansas "Blue Sky" law being suggested; but political platforms have been known to be high sounding in former years.

The idea is to enact a law prohibiting sales of stocks or bonds in the state without registration and license at the State Department, full information regarding financial condition, salaries of officers, fees of promoters proposed, title to land and certifications of value of property, the latter to be made by disinterested parties or officials of states where properties are located, if outside of Pennsylvania, and specific wording in clauses of subscription contracts, are among the features of proposed acts. In this way every seller of stocks or bonds would have to be under state license and even advertising matter registered at the Capitol. The same general plan is being proposed for insurance security sales, as already referred to in these columns.

But more important than all these regulations is that the state should take control of issues by its corporations. Now any company can increase its stocks or bonds without state interference, or electric companies combine without let or hindrance, as long as stockholders agree, because of defects in the laws. The drafts of proposed public utility corporations will doubt less be closely scanned to see if they contain any regulation of this stock or bond issue power.

Study of State Resources.—The present legislature will be called upon, within the next month in all probability, to take action looking to a comprehensive study of the state resources, mineral, agricultural, water and other lines. The plans for this work has not been worked out, but they will be taken up by Governor Tener and his advisers within a short time. The state years ago provided for such a study in connection with its principal mineral resources in the shape of the Geological Survey, which was of more benefit to the coal and iron interests than any other persons or organizations, and its work is virtually finished. The State Water Supply Commission undertook a study of the streams of the state, but beyond depiction of the courses, not much was gone into, and the possibilities in regard to sources of power were handled exhaustively. Governor Tener is known to favor a thoro study of water resources, and strongly urged it in his message, and he is keenly interested in the extension of the study to agricultural and other lines. Coming from the soft coal region, where mining development has changed a country noted for decades for agriculture, he is conversant with the transitions, and knows the economic side. Other state officials have expressed considerable concern for the future, because of coal and iron operations and the exhaustion of soil, and are disposed to make the matter one of state wide significance. Such a survey now would be worth much to the next generation, if carried out thoroly and with proper regard for agriculture, systematic establishment of which is one of the greatest needs of Pennsylvania.

Demonstration Work Assured.—Assurances have been given by members of the legislature that the proposed bill for agricultural counsellors to demonstrate agricultural methods of an advanced order and to give advice to farmers will become a law and an appropriation made to carry it out. This work is designed to supplement the work of the division of farmers' institutes in a practical way, and is the outgrowth of a demand in almost every county for such instruction in the field. The farmers are now given advantage of lectures in winter, but in spring and summer, when they attempt to put the ideas into execution, they are most in need of practical instruction.

Linseed Oil Cases.—The Department of Agriculture has brought half a dozen cases for violation of the linseed oil act the last 10 days, some of the cases showing 20 percent adulteration with mineral oils, and more prosecutions are probable. The feeding stuffs prosecutions this winter are smaller than usual.

Rural Police Plan.—Consultations will be held by state officials and men interested in conservation work during the week on the subject of rural police. One plan is to increase the state police, with requirement that a certain number of men, equalling two-thirds of the force, shall be used for rural patrol work, and another is for county police forces, subject to county commissioners, and designed to have the same powers as a city patrolman. The rural constable does not appear to be meeting conditions in the country any more than the sheriff, according to complaints at the office of the state police.

Inspectors in Conference.—Extension of the states, dairy inspection work and increase of effort against shipments of meat which is unfit for food were discussed at conferences of State Dairy and Meat Hygiene Service officials held here with State Veterinarian C. J. Marshall. The details reports show over 15,000 dairy inspections made in the last year and orders issued to clear up unsanitary premises.

Trout Work Co-operation.—The State Department of Fisheries, which last year adopted the plan of putting out only trout able to take care of themselves has received numerous letters from farmers and fishermen commending the work, and some of them offer co-operation. A number have taken precautions to post circulars warning fishermen to be moderate in their catches, so that the fish may have time to multiply. The co-operative feature will aid materially in the work, says Commissioner N. R. Buller.

Aid for Rural Schools.—The appropriations committee of the house is to be asked by the State Board of Education to provide for aid for at least 25 school districts where investigation shows the wealth of the community too small to provide the full school term. State investigators have secured information regarding the rural districts, and a special item in the appropriation will be asked, the aid to be given only when it is demonstrated that the taxes and assessments on which they are based can not be increased beyond the legal limit. The administration will be left to the Department of Public Instruction.

Contagious Disease Reports.—In the last week reports have reached the Capitol of outbreaks of rabies in vicinity of Berwick and smallpox in Somerset County. These cases of smallpox have been traced to Maryland, and a close watch will be kept along the border, in order to prevent any further contact.

Regulate Express Charges.—Remedial legislation, which will make the constitutional provision against charging more for a short haul than a long haul against express companies, will be presented at this session. The investigations of the State Railroad Commission have found some flagrant violations of this principle in country districts, including shipments of parts of machinery, and owing to the absence of a law to make the constitution effective on such business nothing could be done. The same clause may be applied to telephone companies as well.

Railroads Deny Liability.—In answers to the State Railroad Commission, several of the railroads of the state have denied responsibility for forest fires and for damage to woodlands on farms thru fires alleged to have been due to sparks. The complaints will be brought to a hearing this winter, and it is expected that the whole subject will be threshed out. The way the matter looks now, some legislation is required to define the liability of railroads for damage, and to adopt a measure of determining causes and precautions.—A. Boyd Hamilton.

NEW JERSEY FARM NEWS

Convict Farm.—J. C. Stonaker, secretary of the State Charities and Correction Conference, recommends a farm colony, to which eventually probably one-half of the present population of the Trenton prison would be transferred. He feels that such a change to fresh air and sunshine and active work on the farm will be of the utmost value in the efforts to reclaim these men to orderly lives.

Labor Strikes.—New Jersey had 130 labor strikes during the year ending September 30 last. The number of workmen involved was 32,344, resulting in an aggregate loss of $1,966,547.

Large Treasury Balance.—Despite an unusually heavy drain on the state treasury thru supplemental appropriations made by the last legislature, the fiscal year for 1912 closed with a net free balance in the state treasury amounting to $2,433,061.09. This does not include the sum due the public schools from the railroad taxes, which aggregates $2,827,611.11. With this sum added, the balance would be $5,270,627.20. This net balance is $110,699 more than at the close of the fiscal year of 1911.

Auto License Fees.—State Motor Vehicle Commissioner Lippincott has written a letter to Col. Edwin A. Stevens, State Road Commissioner, admitting the need of additional automobile legislation, but claiming that the automobile license fees for owners of cars in this state should not be increased to the extent suggested by Colonel Stevens, as the effect would be, Mr. Lippincott says, to make the New Jersey motorists pay for the damage done to New Jersey roads by non-resident motorists. Commissioner Lippincott says the needed remedy to meet present conditions is eight more paid automobile inspectors, so the present law may be effectively enforced.

Railroad Taxes.—The State Board of Assessors has announced the assessment against the railroad and canal property in this state for 1912. The total figures are $338,741,092. This is an increase of $14,199,975 over the assessment of 1911. The railroad companies pay their taxes to the state on their main line property at the average tax rate of the state, and this has been computed by the State Board for 1912 at $19.61 on each $1,000 of valuation. On this property, therefore, the railroads will have to pay to the state this year a tax of about $6,700,000, a large proportion of which will go to the public schools.

Building a Concrete Road.—One of the first country roads of concrete ever built in the State of New Jersey is now in process of construction on the Morris Turnpike, east of Phillipsburg. While concrete is a comparatively new material in country road construction, it has been used for a number of years in other parts of the United States. These concrete roads have aroused intense interest. This is due to the fact that they represent a new method in which repairs are reduced to a minimum. Everyone interested in the good roads movement, particularly taxpayers, who are responsible for the building and maintenance of roads, should see this Morris Turnpike road during its construction. It is a practical demonstration of the methods employed to obtain the best results.—D. T. H.

NEW YORK FARM NEWS

Another Big Meeting.—State Senator Franklin D. Roosevelt, chairman of the committee on Agriculture, has announced that he will call a meeting of farmers and of representatives of all agricultural organizations in the state, about February 1, to discuss proposed agricultural legislation. One of the proposed bills requires dealers in farm products to take out a state license and be under the regulations of the state agricultural department.

Railroad Farm Bureau.—The Lackawanna Railroad Company has decided to establish a farm bureau at Cortland, N. Y. It will be in charge of an expert from Cornell. It is the purpose of this company to establish several such bureaus.

Great Agricultural State.—The agricultural census of 1909 shows that New York produced $209,168,000 worth of crops that year. This is nearly 40 percent greater than the product of 1899. Hay and forage leads the list of farm crops in value, at $77,361,000. Potatoes and other vegetables were valued at $36,310,000; oats, $17,977,000; corn, $11,439,000; wheat, $7,176,000; orchard fruits, $17,898,000; flowers, plants and nursery products, $7,900,000; small fruits, $2,875,000. These are the leading products of the state reported, exclusive of dairy products, which will probably be reported later in a separate bulletin.

Cattle Inspection.—If the proposed change in the agricultural law relative to tests for tuberculosis in dairy cattle should be approved, annual inspections of the 1,500,000 dairy cattle in the state will be in order. This is Commissioner Huson's plan, worked out in a conference of cattlemen held some time ago. At present there are less than 30,000 inspections a year. Commissioner Huson is reported as saying that under the present law several generations of cows may live and die without ever being examined by this department and that the condition should not permit milk from such a large number of cows to be consumed without any guarantee as to its deriviation.

Senator Godfrey.—State Senator F. W. Godfrey, of Cattaraugus County, is looked upon as the farmers' representative in the senate. He has been appointed to the agricultural, Insurance, Taxation and retrenchment, and public education committee.

Our Improved Roads.—According to the report of the State Superintendent of Highways, there are 80,000 miles of public roads in the state. Of the state and county highways, 3,578 miles are new improved; 1,627 miles are under contract, and 6,781 miles are planned but not yet under contract. Of the town highways, 3,514 miles have been macadamized, 8,500 miles improved as gravel roads, 50,000 miles crowned and standardized as to width and 6,000 put in safe condition as to travel. All of the original $50,000,000 bond issue has been appropriated, altho there was a balance on December 1, 1912, of $20,810,621. A total of $4,972,882 has been used in town highways improvement.—New Yorker.

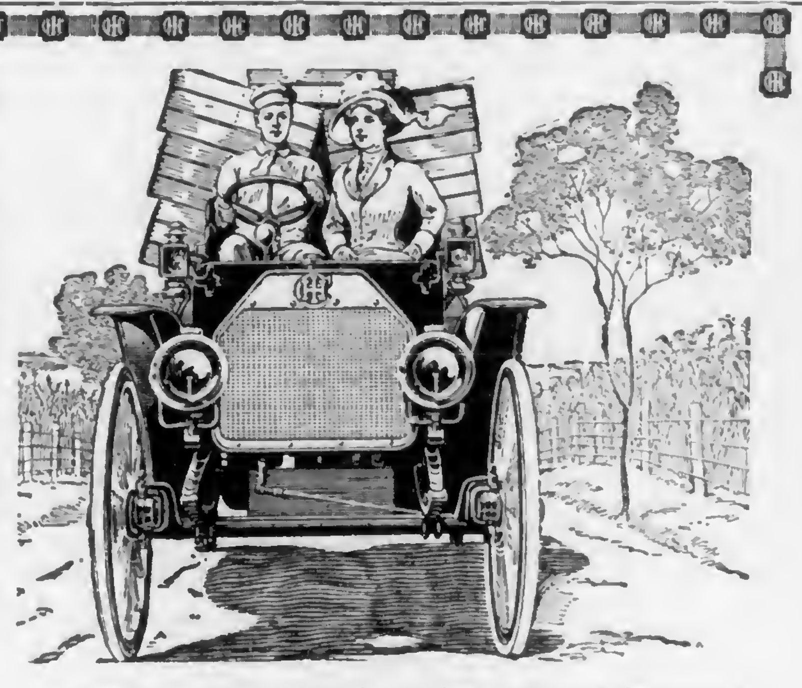
INSTITUTES FOR THE WEEK

January 27-28, at Annville, Lebanon Co., R. P. Kester, S. W. Funk, S. A. Row and E. K. Hibshman. At Rebuck, Northumberland Co., J. T. Campbell. F. W. Card, L. O. Van Noy and Mrs. Edith E. Smith. At Hendersonville, Mercer Co., F. Menges, F. H. Fassett, C. M. Brnitz and E. S. Fowler. At Estella, Sullivan Co., L. W. Lighty, D. E. Murray, G. C. Given and F. R. Stevens. At Mt. Bethel, Northumberland Co., D. H. Watts, W. H. Stout and Dr. W. J. Phillipy.

January 29-30, at Schaefferstown, Lebanon Co., R. P. Kester, S. W. Funk, C. A. Row and E. K. Hibshmamn. At Pottsgrove, Northumberland Co., J. T. Campbell, F. W. Card, Mrs. Edith E. Smith and L. O. Van Noy. At Fredonia, Mercer Co., F. Menges, F. H. Fassett, C. M. Barnitz and E. S. Fowler. At Wilmont, Bradford Co., L. W. Lighty, D. E. Murray, G. C. Given and F. R. Stevens. At Nazareth, Northampton Co., D. H. Watts, W. H. Stout and Dr. W. J. Phillipy.

January 31-February 1, at Jonestown, Lebanon Co., R. P. Kester, S. W. Funk, C. A. Row and E. K. Hibshman. At Watsontown, Northumberland Co., J. T. Campbell, F. W. Card, L. O. Van Noy and Mrs. Edith E. Smith. At West Middlesex, Mercer Co., F. Menges, F. H. Fassett, C. M. Barnitz and E. S. Fowler. At Lime Hill, Bradford Co., L. W. Lighty, D. E. Murray, G. C. Given and F. R. Stevens. At Cherryville, Northampton Co., D. H. Watts, W. H. Stout and Dr. W. T. Phillipy.

The Garden and Orchard.—The new spring catalog of the Mount Hope Nurseries, Box 22a, Rochester, N. Y., is now being distributed. It has 84 pages of handsomely illustrated descriptive matter relating to their complete line of orchard and garden trees, shrubs and seeds. It is sent free upon request.



Only Half An Hour From Town

MODERN farmers have ceased to measure distances by miles. Minutes serve instead. "We are just half an hour from town," says a farmer who lives eight miles out but owns an International Commercial Car. "Loaded or unloaded, the time is about the same. I went to town last spring, starting half an hour after my next neighbor went by my gate with his team, and I passed him just where the main street paving begins. His wagon was empty. I took in nearly a thousand pounds of garden truck. No more road horses for me. Why we visit every friend within thirty miles, attend demonstrations, hear lectures, see entertainments, have a better time in every way since I bought an

International Commercial Car
The Car That Has Made Its Way by the Way It's Made

Every day you run an International Commercial Car you will find it more useful to you. You make the trips you used to neglect, because you did not want to take the horses from their work. It can be used in all seasons when the road is passable to horses. The wheels are high enough to give ample road clearance. Solid tires give good traction and eliminate many tire troubles. The engine is simple and powerful. Fuel and oil cost less than the feed for a horse, while the car will do from two to four times as much work.

It will pay you in many ways to know all about the International Commercial Car. A letter brings full particulars with many interesting facts and figures.

International Harvester Company of America
(Incorporated)
164 HARVESTER BUILDING CHICAGO U S A

TIGHT BINDING

Grange

Conducted by R. P. Kester, Lecturer of Pennsylvania State Grange. Grange notes, queries, comments and news items invited from readers. Address all communications for this department to R. P. Kester, Grampian, Pa.

VALUE OF A GRANGE

A subordinate grange is the most practical and the most natural means of promoting all the interests of a rural community ever conceived in the history of the world, for the following reasons:

1. It contributes to the social life by frequent regular meetings in which the art of sociability is so agreeably and informally taught as to fascinate rather than repel those participating in the exercises.

2. It contributes to the high moral standard by affording convenient and agreeable society for old and young in which the highest standard of morality is maintained, thereby preventing association of its members in society of the opposite nature.

3. It contributes to the happiness of home by the mental recreation afforded all members of the family in the various grange gatherings attended, thereby broadening their mental vision and increasing their happiness, which is sure to be reflected in their home life.

4. It contributes to the material prosperity by its discussion of all matters of importance tending to local development, and often is instrumental in securing the establishment of industries that give added population as well as taxable property, thereby indirectly aiding every taxpayer in town.

5. It contributes to the general intelligence of the inhabitants by its frequent discussion of questions of a public nature and by the educating influence of other exercises, resulting in mental development and a more intelligent citizenship, which is an uplifting force in any town.

6. It contributes to the general welfare by dissipating neighborhood quarrels, by breaking up long-standing feuds caused by church, school, or society troubles, by promoting better roads, better schools, and better farming, by stimulating more interest in public affairs, resulting in the election of better men to office and better enforcement of law, as well as the better transaction of the public business of towns, counties and states.

7. A subordinate grange contributes in these ways to the upbuilding of a rural community by making it a more desirable place to live, and making its citizens more intelligent, more prosperous and more happy.

McSPARRAN'S GRANGE NOTES

The Opening of the Legislature

A great deal of interest centered about the opening of this legislature because of the fact that one of the principal live issues of the present time would be settled at the very beginning of the session, viz., the change of the rules of procedure of the house and senate. To those who have been directly interested in grange legislation it was an occasion of especial importance, because we have so often found that the things we have been promised have been denied when the time for action came. The manipulation of the committees, thru which the work of the legislature is so largely done, has so often prevented the measures that the people wanted from getting even a hearing in the legislature, and therefore this reform lay at the very bottom of all other reform legislation.

We have reason, as grangers to rejoice that another of the measures we have been advocating has been made operative. It was not an entire victory; that is, the senate did not enter into the plan, as we had hoped, and the house did not go quite far enough to assure any real progression as a precedent for future legislatures. And yet, we can rejoice in the victory because the personnel of the committee appointed is a pretty good guarantee of a fair apportionment of committee appointments. Then, too, the change of the rule by which bills are called out of committee is a great step in advance.

There was a principle involved in the change in the manner of appointing committees that we are sorry was not approved by the house, and that was that each party in the state should have the right to name its share of committee members on the standing committees. While it is true that parties should never be allowed to dictate policy to any citizen, and as citizens we should always keep ourselves free to exercise our own judgment and vote accordingly, yet it is just as true that the party is practically the only machinery in politics by which a large number of people can collectively in a systematic and consecutive way perform the functions of a citizen. And while it is true that the hidebound secret party caucus is an antiquated evil, it is also true that the caucus of those who largely think alike and have been elected on the same platform, for the purpose of discussing methods for attaining those things for which their platform stood and which they endorsed, is not only not an evil but is necessary to the most intelligent and unified action. It may be called a conference, but the old word is good enough, so long as the abuses of the caucus are not indulged in by those who compose it.

The ability of each party therefore to appoint its share of committee members is highly essential, because a well-organized minority can do much to hold the majority to a right course; but where the minority is organized by the majority, the strength of the minority to influence legislation is largely gone. And so while the action of the house in appointing a committee on committees will no doubt do great good for this session, yet it can be seen that whenever the legislature is composed of two parties, one or the other will have a majority on the committee on committees, and thus practically dictate the whole business of committee appointments.—John A. McSparran.

GRANGE NOTES

Parcel Post.—The establishment of a parcel post is another victory for the grange. True, in the final effort many other forces were added to that of the grange, and aided in accomplishing it, but it was first demanded by the grange and agitated for long weary years before the public was finally aroused and its aid secured. It is not yet entirely what is needed, but we expect to see it developed until we finally have the real thing—postal express. Let granges and other bodies keep up the agitation, for we may expect to see the opposition continue its fight.

Lecturers' Work.—From the many letters received, the Lecturer believes the forward movement in grange growth is to be continued. Newly-elected lecturers of subordinate granges show an interest most encouraging and commendable. The grange expects every member to do his duty.

Secretary of Agriculture.—Let every patron and farmer use his influence on President-elect Wilson to appoint as his Secretary of Agriculture a real, intelligent and up-to-date farmer; a man who is not only in sympathy with agriculture, but who knows the needs. This, of all other positions, is no place for a professional politician. We have men among us who are big enough for the job. Railroad presidents won't do.

Lecturers' Conference. — Pomona Grange, No. 3, of Pennsylvania, has had for several years an organized Lecturers' Conference, which meets semi-annually. Programs are made out and rendered, discussing such subjects as tend to instruct the subordinate lecturer in his work and make him, not only more efficient, but more enthusiastic. This is one of the reasons why Pomona No. 3 has attained its high place in grange work. Others might do likewise.

Direct Primary Elections in the Grange.—Michigan's plan for electing state grange officials by direct primary methods was not a large success, and yet it was decided, we believe, to give the plan another trial this year. When Michigan gets the thing working well, doubtless other states will try it.

Good Grange Work.—There are 262 granges in Massachusetts, with a total membership of 32,307, an increase of about 1,900 the past year. The grange has an educational fund of about $4,000, which is loaned out to deserving young people of the grange who are seeking an education and who desire temporary financial assistance. Fourteen such loans have been made. Massachusetts patrons want the National Grange to permit such state granges as desire, to hold their annual elections in November, instead of December. State Master Gardner recommended that prizes be given to those granges in the state which have the best record for community service during the year. The recommendation was adopted.

A GOOD MARYLAND POMONA

One of the most successful Pomona meetings ever held in Kent County was that held at Chestertown, January 9. Grangers from all over the county were present, and Chestertown Grange made a fine host. Somehow, the countrymen were slow in arriving, and the meeting did not get started in very good time, but they managed to get a good bit of real solid work done before the first call to dinner. As is customary down here in Maryland, the dinner was worthy of mention. Maryland cooking is much written about, and much eaten also.

In the business session the grange decided to appoint a committee of four to confer with the Chesapeake and Potomac Telephone Company concerning the abominable service rendered to patrons on this exchange; a committee, consisting of two members from each grange, to arrange for a joint picnic of Kent and Queen Anne's granges; a committee of three was appointed to go before the school board and ask permission to use the school buildings for grange meetings. The opinion was expressed that members had already paid taxes for these buildings, so why pay rent for another? The meetings are for the benefit of the farmers and their children, so the school room seems the most appropriate place to hold them.

Three good papers on the cost of growing wheat per acre were read. Opinions differed. Considering 20 bushels as an average yield, $10 was the average price of growing it, leaving about $10 profit. The annual installation of officers took place, Deputy Organizer James F. Anthony having charge. The music furnished was excellent, especially the male quartette.—Evelyn Harris.

PENNSYLVANIA STATE GRANGERS AT RECENT ANNUAL MEETING AT CLEARFIELD, PA.

Profitable Beef Production in Relation to Eastern Farms

By H. E. MOATS, Mercer Co., Pa.

The eastern farmer is facing conditions today that make a change in his farming operations imperative. For years he has followed, for the most part, a line of farming which centered around the dairy. However, times have changed, and high-grade help is scarce and difficult to secure at any price. Dairying demands skilled labor. Dairy products have not kept pace with the advance in price of other lines of farm products. The consumer is paying about all that he can afford to pay for milk, and is fighting any advance. To advance the price of milk and other dairy products, at this time, would lead to a much lower consumption.

And to all this, city health boards are compelling the dairyman to produce milk under restrictions that add greatly to the cost of production, without offering any plan for better compensation for the extra labor and attention necessary to comply with their requirements. These conditions have discouraged many dairymen, and some at least have disposed of their dairy. Many have changed to hay and grain farming, which offers greater cash returns, with much less trouble. But such practice means soil deterioration and abandoned farms, unless large amounts of commercial fertilizer and lime are used. The cheapest and easiest method to maintain the soil fertility on our eastern farms is to feed a greater part of the crops grown on the farm and return the manure to the soil.

The high prices of beef cattle at the present time, and all indications point to the assurance that they will remain high, offer to the eastern farmer a plan by which he can market his crops at home at a profitable price and maintain the fertility of his soil cheaper than by any other method. Our eastern soils are, for the most part, naturally adapted to grass, and the rolling ground must be kept in sod to prevent soil erosion. We have here the only cheap land that yet remains, and this land needs some form of stock raising to build it up and restore it to its former productiveness. We can grow as much grass and clover per acre as on the richer and higher-priced land of the corn belt, and cattle can be produced at a lower cost on pasture and hay than by grain feeding. We will come to realize, sooner or later, that we have here in the East a valuable heritage in the grasses and clovers for live stock production and soil building. Also, the increasing local demand for butcher cattle, generally at an advance over market quotations, makes the beef cattle business look promising.

It would not be advisable for the eastern farmer to dispose of his dairy at this time and devote his entire attention to beef production. But it would be much better to sell a part of his dairy, and in place of these cows raise a number of beef animals. This can be done with much less labor and will return more profit than all dairying. Beef production, coupled with dairying, offers a much better proposition than either separately. With a dual-purpose cow, a calf can be raised that will grow into a good beef animal by feeding it skim milk with grain feeds. The cream can be often sold in our near-by cities during the warm summer months for making ice cream at a higher price than the whole milk, and in some places the cream can be sold to a local creamery, or made into butter on the farm. The cow can be made to pay her keeping, and possibly a profit besides, while raising a calf.

Some give the calf a small quantity of the whole milk while yet warm, and add grain to supply the lacking nutrients, selling the remainder of the whole milk. The last plan requires less labor than separating the milk, but it will cost somewhat more for the whole milk than by the skim-milk plan. Yet calves are less liable to get "off their feed" on the whole milk than skim milk. No matter which method is followed, calves can be raised cheaper than by allowing them to run with the cows, altho more time will be required to bring the cattle to maturity. But this will depend much on the feeding and care given after the first summer.

Beef cattle must be raised on the farm, as we can no longer depend on the ranches for stocker and feeder cattle. Stocker and feeder cattle have sold for the past few years at a price per pound which was close to the price that could be expected when fattened, thus leaving too close a margin for profitable feeding.

Our herd of beef cattle at Mapleland Farm consists of steers that were raised with separator skim milk, supplemented with grain, until about six months old. They were then given a ration of silage, hay and grain thru the winter. After the first winter they received very little grain, making their growth and being fattened on mixed clover and timothy hay and bluegrass pasture. Thus they were produced largely on roughage grown on the farm, and this feed was marketed to the best possible advantage thru the beef steers, and the fertility was retained on the farm. The steers this fall were sold to a local butcher at an advance over market quotations for the same grade. The increasing local demand for beef cattle offers to the eastern farmer a market at high prices, with no fear of over supply.

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GOOD PROFITS FROM THE PASTURE. WITH BEEF SELLING AT $10 PER HUNDRED.

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Molasses is one of the best stock feeds—and one of the cheapest. Rich in carbohydrate, it will supply more energy, proportionately, than any other feed. Keeps animals healthy. More work from horses—more milk from cows fed on molasses. Try it on *your* stock for a month and note results. Recommended by owners, veterinarians and Experiment Stations.

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I have started more breeders on the road to success than any man living. I have the largest and finest herd in the U. S. Every one an early developer, ready for the market at six months old. I want to place one hog in each community to advertise my herd. Write for my plan, "How to Make Money from Hogs." G. S. BENJAMIN, R.F.D.3, Portland, Mich.

Famous O. I. C.'s—Choice gilts and bred sows, and a fine bunch of Sept. pigs. Pairs not akin. S. Royer, Rushsylvania, Ohio.

Sunny Bank Farm Berkshires Both sexes; Masterpiece, Longfellow and Trueworth breedings Reasonable. Reg. free. A. F. Jones, Box 117, Bridgehampton, L.I.

Choice Berkshires, One Yearling Sow-bred Boars and Gilts, spring farrow. Fall pigs. Special prices for January. T. J. KERR, COLLINS, N. Y.

LARGE BERKSHIRES—25 sows and gilts bred for Feb. Mar. and April farrow; young service boars, 40 fall pigs, both sex, no kin. H. P. BAUGHMAN, Wadsworth, Ohio.

BERKSHIRES—Fall pigs and service boars. Stock and prices right. White Holland Turkeys $3.50, raised on farm range. W. A. Lothers, Peru Lack, Pa.

REGISTERED Berkshire Boar For Sale—Clearview Lad 163352, farrowed Mar. 7, 1911. Sacrificed at $20 to avoid inbreeding. J. W. Dodge, Terra Alta, W. Va.

Large Berkshire Swine. Registered High grade. Prices reasonable. Write HOME FARM, CENTER VALLEY, Pa.

Registered Poland Chinas of approved breeding. A grand lot of early spring and fall boars. Twenty-five high classed sows of 1911 farrow will all be safe for early litters. This offering consists of prize winning ancestry. Write me for prices.
C. S. EPPLEY, ZANESVILLE, OHIO.

POLAND CHINAS—Service boars 150 to 200 lbs. Gilts open, or bred and safe in pig. Fall pigs. Pedigree furnished. I. H. BURKHOLDER, R. F. D. 9, Archbold, Ohio

Large Type Poland Chinas—Service boars, sows bred to champion boars for March and April farrow. Fall pigs, either sex. Prices reasonable. L. C. McLaughlin, Pleasantville, Ohio.

Poland Chinas and Delaines. Well bred pigs and rams for sale. C. OWEN CARMAN Box C, Trumansburg N. Y.

POLAND CHINA—Big type service boars, yearling sows, gilts bred for spring farrow also fall pigs. Prolific growthy smooth strain. F. A. Kinsey, Lakeville, O.

Chester Whites—Fine reg. "Gilt," 7 mos. old. Also choice lot of fall pigs out of a Dam by Peace Maker, twice Grand Champion. Fine White Wyandotte Cockerels, $2.00 each. C. C. BRAYMAN, WESTERLO, N. Y.

Fine Lot of Chester-Whites, All Ages FOR SALE. HARDIN BROS., Box 196, LIMA, OHIO.

Chester Whites—Choice registered stock of both sexes of serviceable age for sale. Write your wants. J. A. Boak, Rt. 4, New Castle, Pa.

MULEFOOT HOGS
Oldest breeder in the State. Pedigreed stock for sale. SAMUEL JOHNS, Wilmington, Ohio, Sec. D.

Mule Foot Hogs at Auction. Sale Feb. 15, 1913. 50 bred gilts. Young stock for sale. Write for catalog. J. A. Williams, Rt. 6, Bx B, Eaton, Ohio.

DUROC JERSEYS Two show boars of spring farrow by Red Col, the 900 lb prize winner. Yearling and gilts bred, price $ 0 and up. All cholera immune. V. E. MICHAEL, Veterinarian, Yellow Springs, O.

Duroc Jerseys—Champion herd at W. Va., Pa., N. J. State fairs, 1912. Booking orders for spring pigs. R. B. Martin, Stouts Mills, W. Va.

DOGS

DOGS—Broken Fox Hounds, Beagles and Rabbit Hounds, Coon Hound Pups, Collie Dog 2 years old, Collie Pups, Fox Terriers, Bull Terriers, Spaniels, St. Bernard Brood Bitch, St. Bernard Dog, Great Danes. In writing say just what you want. HARRY REEDER, - THORNDALE, PA

Beagle Dogs and Pups of Pedigreed stock for sale. Honest treatment Assured. CHAS. T. DOWNING, Rt. 2: West Chester, Pa.

Collie Dog, Good Specimen, For Sale. GEORGE CLARK, Rt. 2, DOVER, NEW JERSEY

MISCELLANEOUS

JERSEYS BERKSHIRES

I have these for sale at prices to make their buyer's money:

One fine solid colored Jersey Heifer.
Two Berkshire Boars, one year old and good.
Two younger Berkshire Boars, good.
Six young sow pigs, all growth, hams and fine quality.
Two young sows bred.

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Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., Jan. 20, 1913.

Butter offerings were mostly of unattractive stock. Trading was moderate and prices remained about steady. There was a good demand for fresh eggs and prices remained firm. Poultry was quiet at about steady figures.

Butter.—Western creamery, 36c; extras, 34c; firsts to seconds, 29@34c; special prints, 40@43c; near-by prints, 35@37c.

Cheese.—New York full cream, 18@18½c; skims, 11@15c, according to quality.

Eggs.—Candled, 30@32c doz.; extras, 27c. Current receipts at $6.90@7.20 per standard case.

Poultry.—Fowls, 14@15c; old roosters, 11½@12c; spring chickens, 15@16½c; ducks, 16@17c; pigeons, 18@25c pair; turkeys, 18@19c.

Dressed Poultry.—Western fowls, 17c; roosters, 12½c; chickens, 16@18c; turkeys, 20@23c.

Vegetables.—White potatoes, choice, 73@75c bu. Onions, 30@40c bu. Cabbage, $9@10 ton. Lettuce, $1.00@1.50 basket. Cucumbers, $2.75@4.00 basket. Celery, 25@50c bch. Spinach, 65c@$1 bbl. Kale, 40@50c bbl. Egg plant, $1.75@2.25 box. String beans, $1.50@2.50 bu. Peas, $2@3 basket. Peppers, $1.50@2.00 carrier. Tomatoes, $2.00@3.25 carrier.

Fruit.—Apples, choice varieties, 25@75c hamper, $2.00@3.50 bbl. Cranberries, $5.00@9.00 bbl.; $1.75@2.75 crate.

Hay and Grain.—No. 1 timothy, new, $19.50@20.00; No. 2, $17.50@18.50; No. 3 do., $15.00@16.00. No grade, $10.00@12.00. Clover, mixed, No. 1, $16.00@17.00; No. 2 do., $14.00@15.00. No. 1 tangled rye straw, $19.00@19.50; No. 1 oats straw, $11.00@11.50. New shelled corn, as to quality, 56@57c; new cob, 56@57c per 70 lbs. No. 2 red wheat, 99c@$1.00; No. 3 do., 97@98c. No. 2 white oats, 40½@41c. Standard white, 39½@40c; No. 3 white, 38½@39c.

Hides and Skins.—Steers, abattoir, 17½@18c; do. country, 14@14½c. Cows, abattoir, 14½c; do. country, 11c. Bulls, abattoir, 13c; do. country, 11c. Calf skins, Nos, 5 to 12 and up, $1.35@2.55; do. green, 13@14c lb.

Seeds.—Timothy, $3.15@3.25 bu.; clover, white, $25; do. crimson, $6.25; do. mammoth, $14.50; do. sweet, $13.00; do. alsike, $13.25; red top, per bu., $13.50; alfalfa, $7.00@10.00; Canada field peas, $2.35; vetch, $8.50; rye, winter, $1.35; spring, $2.25; soy beans, $3.25; barley, $2.50; buckwheat, $1.50; cowpeas, $3.00@3.25; millet, $1.90@2.75; oats, $1.20; wheat, $1.70@2.00.

Coffee.—Rio, 7s, 13¼c; Santos, 4s, 15¾c. Mild Coffee—Cordova, 16@18c.

Provisions.—City beef, smoked and air-dried, 21@22c. Beef hams, 29@31c. Pork, family, $21.00@22.00. Hams, cured, 13¾@14¼c; skinned, 12@12¼c; smoked, 14@16c. Other hams, smoked, city cured as to brand, 15@16c. Picnic hams, 11¼@11½c; do. smoked, 13@13½c. Bellies in pickle, 13½@14c. Breakfast bacon, as to quality, 16@20c. Lard, refined, 11¼@11½c; do. in tubs, 11¼@11¾c; do. kettle rendered, 11@11½c. Tallow, prime city, 6¾c; do. country, 6¾c; do. dark, 5¾c; do. cakes, 7c.

Sugar.—Cut loaf, $5.40 cwt.; cubes, $4.85; powdered, $4.75; granulated, $4.60; standard granulated, $4.65; crystal A, $4.60.

Flour.—For 196 lbs., in wood, winter clear, new, $4.10@4.30; do. straight new, $4.50@4.75; favorite brands, $5.00@5.35. Rye flour, Penna., $3.60@3.75.

BALTIMORE PRODUCE

Baltimore, Md., Jan. 20, 1913.

Under a greater demand for choice stock, butter remained firm. The continued mild weather has decreased the demand for eggs, and prices have declined on most grades. Poultry, both live and dressed, was quiet, and receipts were fully equal to the demand. Fruits and vegetables were about steady, with normal trading.

Butter.—Creamery, fancy, 36c; do., choice, 34@35c; prints and blocks, 34@37c. Maryland and Penna. rolls, 22@24c; prints, 21@21½c. Process, 26@28½c.

Cheese.—Flat, 17½c; Daisy, 18@18½c.

Eggs.—Md. and Penna., firsts, 22c; western, 22c; southern, 20@21c.

Live Poultry.—Hens, 13@13½c; chickens, 16c; old roosters, 9c. Turkeys, 20@21c. Ducks, 14@15c. Geese, 14@15c. Guinea fowls, 30@45c each.

Dressed Poultry.—Turkeys, 20@21c; chickens, 15@16c roosters, 10c; ducks, 16@17c; geese, 15@16c.

Vegetables.—Potatoes, white, 60@65c bu. Sweets, $2.25@2.75 bbl. Cabbage, $4.00@5.00 per ton; Danish, $8.00@9.00. Onions, 40@50c bu. Lettuce, 50@75c basket. Egg plant, $2.50@3.00 crate. Peppers, $1.00@1.75 crate. Squash, 10@15c basket. Spinach, 30@35c box. Cucumbers, $3.00@3.50 basket. Beans, green, $1.50@2.50 basket. Celery, $2.50@3.50 crate. Turnips, 15@25c box. Cauliflower, $2.50@2.75 bbl. Horseradish, $1.50@2.00 box. Beets, 40@50c bu.

Fruit.—Apples, new, $2.00@3.50 bbl., 50c@$1.00 bu. Cranberries, $8.00@9.00 bbl.

Grain.—Wheat.—No. 2 red western, $1.07; contract, $1.08. Corn, new, 54c; contract, 54¾c. Oats, No. 2 white, 39½@40c; standard white, 38½@40c; No. 3 white, 37½@38c. Rye, 55@65c.

Hay and Straw.—No. 1 timothy, $18.50@19.00. No. 2 timothy, $16.50@17.00. No. 3 do., $14.00@16.00. Choice mixed, $16.00@16.50. No. 1 clover, $13.00@13.50. No. 2 do., $10.00@12.00. No. 1 tangled rye straw, $12.50@13.00. No. 1 oat straw, $9.00@10.00. No. 1 wheat straw, $8.00.

Millfeed.—Spring bran, $24.00@24.50. Middlings, flour to white, $26.00@28.00; western middlings, $24.00@24.50; city mills mids., $24.00@24.50.

NEW YORK PRODUCE

New York City, Jan. 20, 1913.

The finest grades of butter were in somewhat greater demand than last week, altho inferior grades dragged and were hard to dispose of. Egg arrivals are liberal, and fresh gathered stock is in excess of the demand. Prices, however, were irregular and unsettled. Poultry receipts are moderate, making a slightly firmer tone to the market. There was fair trading in fruits and vegetables at about unchanger prices.

Butter.—Creamery firsts to extras, 30@34c; thirds to seconds, 25@29c; factory, 19@24c; state dairy, 22@32c; packing stock, 17@21½c; process, 22½@27c.

Cheese.—Whole milk special, 18c; do., common to fancy, 16@17¾c; skims, 8@14¾c.

Eggs.—State and near-by, 27@32c; fresh gathered, 23@27c; mixed, 24@26c; refrigerator, 14@21c.

Dressed Poultry.—Turkeys, dry, 19@23c; chickens, Penna., 15@25c; fowls, 14@17c; old roosters, 13c; ducks, 17@20c; roasters, 18@20c.

Live Poultry.—Fowls, 12½@14c; chickens, 12½@13c; roosters, 10c; ducks, 14@15c; geese, 14c.

Grain.—Steady. Wheat, No. 2 red, $1.09; No. 1 Northern, $1.00¼. Corn, 56½c. Oats, standard white, 39c.

Vegetables.—Potatoes, state, $1.75@1.85 per 165-lb. bag. Cabbage, $3@4 ton; do. Danish, $6.00@9.00 ton. Green beans, $1.00@3.50 basket. Carrots, $1.00@1.50 bag. Cucumbers, $1.00@1.50 dozen. Lettuce, 25c@$1.00 basket. Squash, $1.50@1.75 bbl. Celery, 3.00@6.00 case. Horseradish, $3.00@5.00 cwt. Parsnips, $1.00 bbl. Turnips, $1.00 bbl.

Fruit.—Apples, $1.75@4.00 bbl., according to variety. Pears, 40c@$1.15 basket. Cranberries, $6.00@10.00 bbl.

Nuts.—Hickory, $1.00@1.50 bu. Black walnuts, 25@50c bu. Butternuts, $1.00.

YORK PRODUCE MARKET

York, Pa., Jan. 20, 1913.

The markets are still dull. Attendance is large, but inquiry seems light. Butter is unchanged, and eggs are declining rapidly, altho they improved temporarily, and give promise of remaining at about 27@28c.

Butter.—Country, 28@30c; separator, 34@35c. Milk, 6c per qt.

Eggs.—28@30c; storage, 24@27c doz.

Poultry.—Hens, 13c. Dressed poultry, 45@75c each.

Vegetables.—Potatoes, 10c half peck; 55@60c bu.; cabbage, 2@4c each; lettuce, 5@6c; beets, 3@5c bunch, 10c per ½ pk.; radishes, 2@5c; turnips, 8@10c per ½ pk.; onions, 10c per ½ pk.; peppers, 10c doz.; Lima beans, 12@15c qt.; soup beans, 10c qt.; celery, 3@10c stalk; sweet potatoes, 10c per ½ peck; spinach, 10c per ½ pk.; parsnips, 10c per ½ pk.; sauer kraut, 5@7c qt.; lard, 14@16c lb.; corn meal, 5@6c qt.

Fruit.—Apples, 10@25c a half peck; grapes, 12@15c ½ pk.; pears, 12@15c per ½ pk.; chestnuts, 20@25c qt.; walnuts, 15c per ½ pk.

Retail Grain Market.—Wheat, $1.11; corn, 65c; oats, 50c; bran, $1.35 a cwt.; rye, 78c; middlings, $1.55 a cwt.

Wholesale Grain Market.—Wheat, $1.04; corn, 54c; oats, 38c; rye, 68c.

WASHINGTON PRODUCE

Washington, D. C., Jan. 20, 1913.

Eggs.—Near-by, fresh, per dozen, 21@22c; southern, per dozen, 20@21c.

Cheese.—New York, new, per pound, 19c; flat, 19c.

Butter.—Best prints, per pound, 37½c; tub, 36½c; process, 27@28c; undergrades, 25c.

Live Poultry.—Hens, per lb., 13c; roosters, 9c; springers, 16@17c; turkeys, 17@19c; geese, live, 12@13c; ducks, 13@15c.

Vegetables.—Potatoes, bbl., $1.25@1.75; 70@80c bu. Onions, 90c@$1.10 per 100-lb. bag. Lettuce, per bas., 75c@$1.50. Beans, $1.50@2.50 basket. Peppers, per crate, $1.00@1.25. Egg plants, per box, $2.25@3.00. Squash, per bbl., $1.50@2.25. Beets, $1.50@2.00 per 100 bchs. Mushrooms, per lb., 35@50c. Carrots, 1½@2½c bch. Cabbage, $2.00@3.50 bbl. Radishes, 50c@$1.00 per 100. Cauliflower, $1.50@2.50 crate. Apples, $1.50@4.00 bbl.

WILMINGTON PRODUCE

Wilmington, Del., Jan. 20, 1913.

There was less trading on the market this week, probably as a result of the unusual weather conditions. Prices on most commodities showed a fractional decline and an unsteady feeling prevailed during the entire week.

Fruits.—Apples, 50c basket. $2.50@4.00 bbl. Grapes, $4.00@6.50 keg.

Vegetables.—Potatoes, 80c bu.; $2.00 bbl. Cabbage, 75c@$1.00 bbl.; 25c basket; 4c each. Onions, 40c basket. Celery, 25@50c doz.; 5@15c bch. Spinach, $1.50 bbl. Sweet potatoes, 75@80c basket; $3@3.50 bbl. Kale, $1.25 bbl. Carrots, 10c ½ pk. Lettuce, $1.50 basket.

Poultry.—Chickens, live, 15@16c; do., dressed, 16@17c. Ducks, 14c lb.; dressed, 17c.

Eggs.—29c; storage, 22@24c.

Butter.—Creamery, 29@33c; prints, 36@43c.

BUFFALO PRODUCE

Buffalo, N. Y., Jan. 20, 1913.

Butter.—Light demand. Creamery choice, 36@37c; choice dairy, 32@33c.

Cheese.—Active and firm. Fancy, 17@18c; good, 17@17½c.

Eggs.—Steady. State, candled, 29@31c; storage, 20@24c.

Dressed Poultry.—Good. Turkeys, per lb., 23@25c; fowls, fancy, 14@18c; chickens, 15@18c; old roosters, 12@13c; ducks, 20@21c; geese, 17@18c.

Live Poultry.—Lower. Chickens, 15@18c; ducks, 16@19c; geese, 14@16c; turkeys, 21@24c.

Vegetables.—Potatoes, active. Home-grown, 65@68c bu. Cabbage, $1.50@2.50 per 100. Onions, 50@60c bu. Beans, green, $2.00@3.50 hamp. Turnips, 75@80c bbl. Celery, 25@35c doz.

Beans.—Quiet, steady. Marrow, fancy, $3.30@3.40; medium, $2.50@2.60; red kidneys, $2.75@3.00.

Fruits.—Apples, $1.75@2.75 bbl.; 50@75c bu.

Honey.—Quiet. No. 1 fancy, 17@18c. No. 2 new, 14@15c; dark, 12c.

Hay.—Firm. Timothy, choice, on track, $18.50; No. 1 do., $18.00; No. 2, $17.00; light mixed, No. 1, $16.50; rye straw, $10.00@11.00; oat and wheat straw, $9.00@10.00.

Feed.—Steady. Spring bran, $22.50 ton. Standard mids., $22.75. Cornmeal, $24.00. Gluten, $27.50. Hominy, $24.25.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., Jan. 20, 1913.

The cattle market was somewhat quiet and lacked the animation of the preceding week. The unusual weather caused less interest, and a fractional drop was felt in every line.

	Beef Cattle	Sheep and Lambs	Hogs
Total for week	4,918	12,900	5,352
Previous week	4,512	13,374	4,653

Best steers	$8.37½@8.50
Choice steers	8.00@8.25
Good	7.50@7.75
Medium steers	6.75@7.00
Common steers	6.25@6.50
Bulls	4.50@6.50
Fat cows	5.00@6.00
Thin cows	2.75@3.25
Milk cows	40.00@65.00

Veal calves are steady.

Best calves	$11.00@12.00
Good to choice do.	10.00@10.50
Medium	7.00@8.00
Common do.	6.50@6.75
Thin do.	5.00@8.00

Sheep and lambs were somewhat dull. Prices burely remained steady.

Extra wethers	$6.25@6.50
Choice wethers	5.75@6.00
Good wethers	5.25@5.50
Common to medium	3.00@5.00
Ewes, fat	5.00@5.50
Extra lambs	9.50@9.75
Good to choice do.	9.00@9.25
Common to medium	5.75@8.25

Hogs are about steady, westerns selling at $10.50@10.75.

City Dressed Stock.—Choice classes of dressed meat are steady. Trade is normal. Steers, 10@13½c; heifers, 9@12c; cows, 7½@10½c. Veal calves, 14@16c; country dressed calves, 13@14c; extra do., 15c. Sheep, 9@10c; extra wethers, 11c. Spring lambs, 13@15c. Hogs, 11c.

NEW YORK LIVE STOCK

New York City, Jan. 20, 1913.

Cattle receipts were 4,193 head. The market is weak.

Steers	$4.87½@8.30
Bulls	4.75@6.25
Cows	3.25@6.00

Dressed beef steady at 9½@13c for native sides; $8.50@10.00 for light weights.

Calf receipts were 2,547 head. The market is steady.

Choice veals	$12.00@12.50
Good veals	8.50@11.50
Culls	6.00@8.00
Barnyard calves	4.75@5.50
Fed calves	6.00@8.00
Westerns	3.75@5.00

Dressed calves are steady.

City-dressed veals	14@18½c
Country-dressed veals	10@16½c

Sheep and lamb receipts were 11,219 head. Sheep are steady and lambs 25c higher.

Sheep	$4.50@6.00
Culls	3.50@4.00
Lambs	6.00@9.75
Culls	6.00@7.50
Yearlings	6.00@8.00

Hog receipts were 13,545 head. The market is 10@15c higher.

Light to heavy	$7.80@8.00
Pigs	8.15@8.25

BALTIMORE LIVE STOCK

Baltimore, Md., Jan. 20, 1913.

Under lighter demand the beef market declined in every grade.

Steers	$6.00@8.20
Heifers	4.00@6.75
Cows	4.00@5.00
Bulls	3.50@4.50
Fresh cows	$27.50@80.00

The supplies of sheep and lambs were fully ample to meet demands. Prices were lower, except on the choicest stock.

Sheep	$3.00@3.25
Lambs	7.00@8.00

Hogs were about steady under equal demand and supply.

Light westerns	$7.25@8.00
Heavy to medium	8.00@8.25
Near-by	7.80@7.90
Pigs	7.00@7.80
Roughs	6.00@7.50

Calves showed less activity than last week. Only choice stock was in demand at 5@10½c lb.

BUFFALO LIVE STOCK

Buffalo, N. Y., Jan. 20, 1913.

Cattle receipts today were 170 loads. The market was about steady under fair trading.

Choice heavy steers	$8.50@9.00
Medium	7.75@8.25
Yearlings	7.50@8.75
Plain heavy	7.50@7.75
Handy butchers	7.25@7.75
Good to choice fat cows	5.00@6.50
Good to choice heifers	5.50@8.25
Butcher bulls	4.00@6.75
Feeders	5.40@6.75
Stockers	4.50@5.50
Cows and springers	40.00@85.00

Calf receipts today were 850 head. The market was active and steady.

Choice veals	$11.50@12.00
Light and thin	4.00@6.50

There were 14,400 head of sheep and lambs on sale today. The market was active.

Choice lambs	$9.50@9.60
Poorer grades	6.00@6.50
Yearlings	7.50@8.50
Wethers	6.25@6.50
Ewes	5.50@5.75
Sheep	6.00@6.25

Today's hog receipts were 14,500 head. The market was active, but prices lower than last week.

Heavies	$7.90@8.00
Mixed and medium	7.75@8.00
Yorkers	7.75@8.00
Light Yorkers	7.75@8.00
Pigs	7.75@8.00
Stags	5.50@6.50
Roughs	6.75@7.00

PITTSBURGH LIVE STOCK

Pittsburgh, Pa., Jan. 20, 1913.

Today's cattle receipts were 90 loads. The market was active and stronger.

Good to choice	$8.35@8.50
Good, 1300 to 1400 lb.	8.00@8.25
Medium to good, 1200-1300 lb.	7.75@8.10
Tidy, 1050-1150 lb.	7.65@8.25
Fair to medium, 900-1100 lb.	7.25@7.60
Common to good fat oxen	4.00@6.00
Common, 700-900 lb.	5.00@6.00
Common to good fat bulls	3.50@7.00
Common to good fat cows	3.75@6.50
Heifers, 700 to 900 lbs.	4.25@7.50
Bologna cows	3.50@3.85
Fresh cows and springers	25.00@80.00

Calves.—Receipts were 600 head. The market is steady.

Heavy and thin calves	$5.00@7.00
Veal calves	8.00@11.50

Hogs.—Today's hog receipts were 50 double-deck loads. The market was 15@20c higher.

Prime heavy	$7.85@
Prime medium weights	8.10@
Heavy mixed	7.90@
Best heavy Yorkers	8.15@
Light Yorkers	8.00@
Pigs as to quality	7.50@7.85
Common to good roughs	6.60@7.00
Stags	5.75@6.25

The supply of sheep and lambs today was 40 double-deck loads. With a good demand sheep ruled steady and lambs higher.

Prime wethers	$6.10@6.25
Good mixed	5.60@5.75
Fair mixed ewes and wethers	5.00@
Culls and Commons	3.00@4.00
Spring lambs	6.00@8.25
Good mixed	5.60@5.75

PITTSBURGH HAY AND GRAIN

Pittsburgh, Pa., Jan. 20, 1913.

The receipts of low-grade hay have been greater than the demand, much of which has been sold at a concession. Market is weaker. Clover hay is dull, and threshed hay is not wanted. Good grades are fairly steady. The straw market is easier under heavy receipts and sluggish demand. No. 1 timothy, $16.00@16.50; No. 2 do., $14.00@15.00; No. 3 do., $12.00@13.00; No. 1 light mixed, $14.50@15.00; No. 1 clover mixed, $14.50@15.00; No. 2 do., $14.50@15.00. No. 1 clover, $14.50@15.00; No. 2 do., $10.00@13.00. No. 3 prairie, $11.00@11.50; No. 4 do., $9.00@10.00. No. 1 oat straw, $9.50@10.00; No. 2 do., $9.00@9.50; No. 1 wheat, $9.50@10.00; No. 2 do., $9.00@9.50; No. 1 rye, $11.00@11.50. No. 2 do., $9.50@10.00. Ear corn arrivals are in good demand. Market strong. No. 2 yellow, 55@56c. No. 2 high mixed, 54@55c. Shelled corn is active and firm; arrivals are easily placed at market quotations. No. 2 yellow shelled, 56½@57½c; No. 3 do., 55½@56½c; No. 3 natural, 54@54½c; sample, 52@53c. Oats are in heavy receipt and slow demand. Market dull. No. 2 white, 37@37½c; standard, 36@36½c; No. 3 do., 35½@36c; No. 4 do., 34@35c; The demand for middlings is very slow, but bran has improved. Market dull. No. 2 white mids., $25.00@25.50; No. 1 brown mids., $22.50@23.00. Winter wheat bran, coarse, $23.00@23.50; do., medium, $22.50@23.00.

ELGIN BUTTER QUOTATION

Elgin, Ill., Jan. 20, 1913.

The quotation committee of the Elgin Board of Trade this afternoon declared butter firm at 32c a pound.

NEW YORK MILK QUOTATION

The wholesale milk price is $1.81 per 40-quart can for class C; class B, $1.91.

Farm Implements.—The value of best quality, fair dealing and reasonable prices in business methods is strikingly exemplified in the business history of the Johnston Harvester Company. Johnston farm machinery has earned a world-wide reputation for quality, efficiency and general all-around satisfaction. A new catalog, just out, describes and illustrates the latest improved offerings of this company, including grain and corn binders, reapers, mowers, hay rakes and tedders, hay loaders, disk harrows, spring and spike-tooth harrows, cultivators, manure spreaders, pulverizers and rollers. The experience of 71 years of implement manufacturing stands back of these machines. The catalog will be sent free upon request to The Johnston Harvester Co., Box 131, Batavia, Ill.

New Bulletins

Moisture Control of Butter.—This subject is of great importance to the dairymen. It is thoroly discussed in Bulletin 160, of the Perdue Experiment Station, at Lafayette, Ind. It, in part, says: Large churnings yield butter with a higher percent of moisture than small churnings. Butter from raw cream contains more moisture than butter from pasteurized cream. High churning temperatures make butter retain more moisture than low temperatures. Working the butter in water, regardless of temperature, increases the moisture content.

Silage for Steers.—The Pennsylvania Experiment Station Bulletin 115, published at State College, Pa., gives the results of an experiment conducted at that station on the value of silage for steers. It states that silage can be used as roughage, even in the coldest weather, when fed in an open shed. There was considerable saving of corn by the exclusive use of silage during the first part of the feeding period. The experiment clearly shows that beef can be finished profitably in this state when proper attention is paid to the growth of crops equally adaptable to the soil and to feeding purposes.

Selecting Feeding Steers.—The Wisconsin Experiment Station, at Madison, Wis., has issued Bulletin 224, on the selection of steers for feeding. It states that in selection, probably the most important point is the back. A wide, straight, strong back, with a well-sprung rib, is essential. The girth should be large, which means more room for vital organs, and insures a better constitution. The head is a good index to the character of the feeder. The steer with a wide head is usually a good feeder, since this point argues for food capacity, and such an animal will develop thick thru the body and wide across the back. Other valuable features are discussed in this bulletin.

Fertilizers.—The fertilizer inspection of New Jersey for 1912 resulted in a collection of 1,095 samples of commercial brands of mixed fertilizers and fertilizing materials. Of this total, 381 were analyzed. It is very important that we know just what the fertilizers we buy contain, not only for those who buy complete fertilizers, but also for those who make their own mixtures. Bulletin 252, of the New Jersey Experiment Station, at New Brunswick, N. J., contains the analyses of these samples. This bulletin provides a very good guide upon which to base calculations for home mixing, and enables a more intelligent buying of complete fertilizers. It should be carefully studied.

Wheat Improvement.—"A farmer can keep his wheat from 'running out' by the use of a fanning mill, proper care in threshing and by occasional selection of a few heads at harvest time to be planted in a seed plot." The Michigan Experiment Station has demonstrated this beyond a doubt. They found that the general low wheat yields are largely due to many varieties which are not adapted to the conditions under which they are grown. They have experimented with crosses and new combinations, some of which have given good results. These may be found in Bulletin 268, of the Michigan Experiment Station, at East Lansing, Mich., and all wheat growers should send for this bulletin and study it.

Forest Fires.—Bulletin 113, of the Department at Washington, gives methods of preventing and controlling forest fires which is of value to all farmers who own extensive woodlots.

Peach Tree Borer.—"It was found that a thick, heavy coating of asphaltum prevented both the issuance and entrance of about 98 percent of the insects." A discussion of this asphalt treatment, together with information concerning, promoting germination of seed, cotton anthracnose, raising and finishing beef calves, open-shed feeding of steers, four systems of dairy farming, market hogs, uses of the sweet potato, vinegar making from waste grapes and lighting farm homes, may be found in Farmers' Bulletin 517. This bulletin may be obtained by writing to the Department of Agriculture, at Washington, D. C.

Chick Feeding.—A complete list of the necessary food elements for chick feeding, together with formulae for their combination and uses may be found in Circular 18, of the Montana Experiment Station, at Bozeman, Mon. This is a valuable circular to all poultrymen and farmers who are raising chickens, whether it be in Montana or Pennsylvania.

Spraying Program.—A thoro discussion of the more common orchard pests has been published in Circular 17, of the Montana Experiment Station, at Bozeman, Mont. This circular also contains a spray program in tabular form, giving dates when to spray, what to spray for, and how to do it. All horticulturalists should study this circular.

Bulletin 88, of this station, is an interesting report of the State Entomologist containing discussions of many of the more common economic insects. The cabbage worm, cutworm, chinch bug, alfalfa weevil, green aphis and many others are described and reported.

Vetches.—If the value of the vetches were more generally known, more of them would be grown. They are not only valuable as a hay, but also as a cover crop. There are two strains, winter and spring, and because of their hardiness and the nitrogen gathering properties they can be worked into nearly every rotation. Farmers' Bulletin 515 contains one of the most thoro discussions of the vetches and their uses to be found, and this bulletin should be carefully studied. A few cover crops of vetch will bring up the soil wonderfully, and the cheapness and ease with which the crop may be grown makes it of especial value.

Fungicides for apples.—After extensive experimentation, the New Hampshire Experiment Station publishes, in Bulletin 161, the results obtained with various fungicides. They have found that bordeaux controls the various diseases better than any other material. It should be made at home according to the 3-3-50 formula. However, there is some danger of injury from bordeaux, especially when the spraying is followed by showers. Where fancy fruit is grown, lime and sulfur should be substituted, since it does no injury and is almost as satisfactory as bordeaux. They have found that the Baldwin is more susceptible to bordeaux injury than the McIntosh. For further details send for this bulletin to Durham, N. H.

The Feed Unit System.—The Wisconsin Experiment Station has issued a bulletin (37) on the feed unit system, a system of great value to feeders and dairymen. It has been found that part of the feed energy furnished by the digestible portion is lost to the animal thru the following channels: In the intestines and paunch, the carbohydrates, especially the wood fiber, undergo fermentation, gases being given off which are without value to the animal. (2) Energy is lost in the urea and other organic substances voided in the urine. (3) A part of the total energy furnished by the digestible portion of the food is expended in the work of chewing and digesting the food and absorbing the nutrients into the body tissue. Details of this feed unit system may be had by sending to the Wisconsin Experiment Station at Madison, Wis.

Farm Sewage Disposal. Farmers have come to realize that water in the home is just as important as water in the barn, and more and more water systems are being installed every year. Circular 34, of the Wisconsin Experiment Station, at Madison, Wis., takes up the matter of sewage disposal. It is found that the average cost of a double tank system totals $69.00. The tank is concrete, mixed 1-2-4. This total, however, varies with different systems, but the figures given are for an average farm home. It is important that sewage disposal be very carefully attented to, and this circular may be followed in detail by the farmer who is building his own system.

Milk sediment. Circular 41, of the Wisconsin Experiment Station, at Madison, Wis., states that milk delivered to creameries and cheese factories, as well as that used for direct consumption, contains large amounts of sediment, which indicates careless handling. The small-top milk pail will keep a large percentage of dirt out, and by reducing the number of bacteria, improves the keeping qualities. Straining does not materially increase the keeping qualities, but improves the appearance. The sediment test is an easy and rapid way to determine the amount of sediment, and thus indicate its sanitary condition.

CATALOG NOTES

Apple Breeding.—Bulletin No. 350 of the Geneva Experiment Station discusses an entirely new line of work—apple breeding. It gives descriptions of 14 new varieties from crosses of known parents, with a discussion of the apparent inheritance of characters, thus making it of interest to both apple growers and students of breeding. It may be secured, in either regular or popular edition, by addressing the above station at Geneva, N. Y.

Plans for the Garden.—The new 1913 catalog of the D. M. Ferry Co., Detroit, Mich., will be the greatest aid to successful plans for the garden. The catalog is full of facts that will help in the production of good vegetables and flowers. It will be sent free to those who write for it.

Limestone Crushers.—The literature being sent out by the manufacturers of the Wheeling Forced Feed Crusher tells all about these powerful, light-running crushers. It also shows how farmers can crush their own limestone, and secure lime for about 65 cents per ton. This not only enables farmers to make use of the waste stone on the farm, but also provides one of the most needed soil conditioners. Descriptive matter will be sent free upon request. Address the Wheeling Mold and Foundry Co., 110 Raymond St., Wheeling, W. Va.

Fruit and Flowers.—The new catalog of the Woodlawn Nurseries offers a full line of fruit and flower stock of the well-known "Wood Quality." It also describes the liberal selling offer and the novel plan whereby 10,000 trees are given away each year. You will want this catalog before you buy. It is free. Address Allen L. Wood, 639 Culver Road, Rochester, N. Y.

Horticultural Hand Book.—The Pratt's Hand Book for Fruit Growers for 1913 is full of useful and practical information. It is a complete catalog of the injurious insect and disease pests which prey upon trees and shrubs, and gives complete directions for control and prevention. It also gives interesting information on orchard supplies and equipment. It is free to Pennsylvania Farmer readers. Address B. G. Pratt Co., 50 Church Ct., New York City.

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BOOK II

WHAT HAPPENED AT NINE O'CLOCK

CHAPTER X

Caroline Mitford Writes a Despatch

The War Department Telegraph Office had once been a handsome apartment, one of those old-fashioned, heavily corniced, marble-manteled, low-windowed, double-doored rooms in a public building. It was now in a state of extreme dilapidation, the neglected and forlorn condition somehow being significant of the moribund Confederacy, in which practically everything was either dead or dying but the men and women.

A large double door in one corner gave entrance to a corridor. The doors were of handsome mahogany, but they had been kicked and battered until varnish and polish had both disappeared, and they looked as dilapidated as the cob-webbed corners and the broken mouldings. On the other side of the room, three long French windows gave entrance to a shallow balcony of cast iron fantastically moulded, which hung against the outer wall. Beyond this the observer peering thru the dusty panes could discern the large white pillars of the huge porch which overhung the front of the building. Further away beyond the shadow of the porch were visible the lights of the sleeping town, seen dimly in the bright moonlight.

The handsome furniture which the room had probably once contained had been long since displaced by the rude telegraph equipment, and the heavy plaster cornices and mouldings were sadly marred by telegraph wires which ran down the walls to the tables, rough pine affairs, which carried the instruments. There were two of these tables, each with a telegraph key at either end. One of them stood near the entrance of the room, and the other, some distance away, was backed up against the fine old marble mantel, chipped, battered, ruined like the rest of the room. For the rest, the apartment contained a desk, shelves with the batteries on them, and half a dozen chairs of the commonest and cheapest variety. The floor was bare, dusty, and tobacco stained. The sole remnant of the ancient glory of the room was a large handsome old clock on the wall above the mantel, the hands of which pointed to the hour of ten.

But if the room itself was in a dingy and even dirty condition, the occupants were very much alive. One young man, Lieutenant Allison, sat at the table under the clock, and another, Lieutenant Foray, at the table in the center of the room. Both were busy sending or receiving messages. The instruments kept up a continuous clicking, heard distinctly above the buzz of conversation which came from half a dozen youngsters, scarcely more than boys, grouped together at the opposite side of the room, waiting to take to the various offices of the Department, or to the several officials of the government, the messages which were constantly being handed out to them by the two military operators.

In the midst of this busy activity there came the noise of drums, faintly at first, but presently growing clearer and louder, while the tramp of many feet sounded in ths street below.

‘‘What's that?’’ asked one messenger of the other.

‘‘I don't know,’’ was the answer; ‘‘troops of some kind. I'll look out and see.’’

He stepped to one of the long windows, opened it, and went out on the balcony. The other young fellows clustered at his back or peered thru the other windows.

‘‘It's the Richmond Greys,’’ said the observer outside.

There was an outburst of exclamations from the room, except from the operators, who had no time to spare from their work.

‘‘Yes, that's what they are. You can see their uniforms. They must be sending them down to the lines at Petersburg,’’ said another.

‘‘Well, I don't believe they would send the Greys out unless there was something going on tonight,’’ observed a third.

‘‘Tonight, why, good heavens, it's as quiet as a tomb,’’ broke in a fourth. ‘‘I don't hear a sound from the front.’’

‘‘That's probably what's worrying them. It is so damn unusual,’’ returned the first messenger.

‘‘Things have come to a pretty pass if the Grandfathers of the Home Guard have got to go to the front,’’ remarked another.

‘‘Following in the footsteps of their grandsons,’’ said the first. ‘‘I wish I could go. I hate this business of carrying telegrams and——’’

‘‘Messenger here!’’ cried Lieutenant Foray, folding up a message and inserting it in its envelope.

The nearest youngster detached himself from the group while all of them turned away from the windows, stepped to the side of the officer and saluted.

‘‘War Department,’’ said Foray tersely. ‘‘Tell the Secretary it's from General Lee, and here's a duplicate which you are to give to the President.’’

‘‘Very good, sir,’’ said the messenger, taking the message and turning away.

As he passed out of the door, an orderly entered the room, stepped to the side of Lieutenant Foray, the senior of the two officers on duty, clicked his heels together, and saluted.

‘‘Secretary's compliments, sir, and he wants to know if there is anything from General Lee,’’ he said.

‘‘My compliments to the Secretary,’’ returned the Lieutenant. ‘‘I have just sent a message to his office with a duplicate for the President.’’

‘‘The President's with the Cabinet yet, sir,’’ returned the orderly. ‘‘He didn't go home. The Secretary's there, too. They want an operator right quick to take down some cipher telegrams.’’

Lieutenant Foray looked over to his subordinate.

‘‘Got anything on, Charlie?’’ he called out.

‘‘Not right now,’’ answered Lieutenant Allison.

‘‘Well, go over with the orderly to the Cabinet room and take down their ciphers. Hurry back tho,’’ said Foray, as Allison slipped on his coat—both officers had been working in their shirt sleeves—‘‘we need you here. We are so short-handed in the office now that I don't know how we are going to get thru tonight. I can't handle four instruments, and——’’

‘‘I will do my best,’’ said Allison, turning away rapidly.

He bowed as he did so to a little party which at that moment entered the room thru the door, obstructing his passage. There were two very spick and span young officers with Miss Caroline Mitford between them, while just behind loomed the ponderous figure of old Martha.

‘‘You wait in the hall right here, Martha; I won't be long,’’ said Caroline, pausing a moment to let the others precede her.

The two young men stopped on either side of the door and waited for her.

‘‘Miss Mitford,’’ said the elder. ‘‘This is the Department Telegraph Office.’’

‘‘Thank you,’’ said Caroline, entering the room with only the briefest of acknowledgments of the profound bows of her escorts.

She was evidently very much agitated and troubled over what she was about to attempt. The two young men followed her as she stepped down the long room.

‘‘I am afraid you have gone back on the Army, Miss Mitford,’’ said one of them pleasantly.

‘‘Gone back on the Army, why?’’ asked Caroline mystified.

‘‘Seems like we should have a salute as you went by.’’

‘‘Oh, yes,’’ said the girl.

She raised her hand and saluted in a perfunctory and absent-minded manner, then turned away from them. She nodded to the messengers, some of whom she knew. One of them, who knew her best, stepped forward.

‘‘Good-evening, Miss Mitford, could we do anything in the office for you tonight?’’ he asked.

‘‘Oh, yes,—you can. I want to send a—a telegram.’’

The other of the young officers who had escorted her, who had remained silent, now entered the conversation.

‘‘Have you been receiving some bad news, Miss Mitford?’’ he asked sympathetically.

‘‘Oh, no.’’

‘‘Maybe some friend of yours has gone to the front, and——’’ interposed the first officer.

‘‘Well, supposing he had,’’ said Caroline, ‘‘would you call that bad news?’’

‘‘I don't know as you would exactly like to——’’

‘‘Let me tell you,’ said Caroline, ‘‘as you don't seem to know, that all my friends have gone to the front.’’

There was an emphasis on the pronoun which should have warned the young soldier what was about to occur, but he rushed blindly to his doom.

‘‘I hope not all, Miss Fitford,’’ he replied.

‘‘Yes, all,’’ rejoined Caroline, making the ‘‘all’’ very emphatic, ‘‘for if they did not they wouldn't be my friends.’’

‘‘But some of us are obliged to stay here to take care of you, you know,’’ contributed the other young man.

‘‘Well, there are altogether too many of you trying to take care of me,’’ said Caroline saucily, with some return of her usual lightness, and you are all discharged.’’

‘‘Do you mean that, Miss Mitford?’’

‘‘I certainly do.’’

‘‘Well, I suppose if we are really discharged, we will have to go,’’ returned the other.

‘‘Yes,’’ said his companion regretfully, ‘‘but we are mighty sorry to see you in such low spirits.’’

‘‘Would you like to put me in real good spirits, you two?’’ asked Caroline, resolved to read these young dandies who were staying at home a lesson.

‘‘Wouldn't we?’’ they both cried together. ‘‘There's nothing we would like better.’’

‘‘Well, I will tell you just what to do then,’’ returned the girl gravely and with deep meaning.

Everybody in the room, with the exception of Lieutenant Foray, was now listening intently.

‘‘Start right out this very night,’’ said the girl, ‘‘ and don't stop till you get to where my real friends are, lying in trenches and ditches and earthworks between us and the Yankee guns.’’

‘‘But really, Miss Mitford,’’ began one, his face flushing at her severe rebuke, ‘‘you don't absolutely mean that.’’

‘‘So far as we are concerned,’’ said one of the messengers, including his companions with a sweep of his hand, ‘‘we'd like nothing better, but they won't let us go, and——’’

‘‘I know they won,’’ said Caroline, ‘‘but so far as you two gentlemen are concerned, I really mean it. Go and fight the Yankees a few days and lie in ditches a few nights until those uniforms you've got on look as if they might have been of some use to somebody. If you are so mighty anxious to do something for me, that is what you can do. It is the only thing I want, it is the only thing anybody wants.’’

‘‘Messenger here!’’ cried Lieutenant Foray as the two young officers, humiliated beyond expression by the taunts of the impudent young maiden, backed away and finally managed to make an ungraceful exit thru the open door, followed by the titters of the messengers, who took advantage of the presence of the young girl to indulge in this grave breach of discipline.

‘‘Messenger!’’ cried Foray impatiently.

‘‘Here, sir,’’ came the answer.

‘‘Commissary General's office!’’ was the injunction with which Forey handed the man the telegram.

He looked up at the same time, and with a great start of surprise caught sight of Caroline at the far end of the long room.

‘‘Lieutenant Foray,’’ began the girl.

‘‘I beg your pardon, Miss Mitford,’’ said the operator, scrambling to his feet and making a frantic effort to get into his coat. ‘‘I heard someone come in, but I was busy with an important message and didn't appreciate that—’’

‘‘No, never mind, don't put on your coat,’’ said Caroline. ‘‘I came on business, and——’’

‘‘You want to send a telegram?’’ asked the Lieutenant.

‘‘Yes.’’

‘‘I am afraid we can't do anything for you here, Miss Mitford, this is the War Department Official Telegraph Office, you know.’’

‘‘Yes, I know,’’ said Caroline, ‘‘but it is the only way to send it where I want it to go, and I——’’

At that moment the clicking of a key called Lieutenant Foray away.

‘‘Excuse me,’’ he said, stepping quickly to his table.

Miss Mitford, who had never before been in a telegraph office, was very much mystified by the peremptory manner in which the officer had cut her short, but she had nothing to do but wait. Presently the message was transcribed, another messenger was called.

‘‘Over to the Department, quick as you can go. They are waiting for it,’’ said Foray. ‘‘Now, what was it you wanted me to do, Miss Mitford?’’

‘‘Just to—to send a telegram,’’ faltered Caroline.

‘‘It's private business, is it not?’’ said Foray.

‘‘Yes, it is strictly private.’’

‘‘Then you will have to get an order from——’’

‘‘That is what I thought,’’ said Caroline, ‘‘so here it is.’’

‘‘Why didn't you tell me before,’’ returned Foray, taking the paper, ‘‘Oh—Major Selwin——’’

‘‘Yes, he—he's one of my friends.’’

‘‘It's all right then,’’ interposed the Lieutenant, who was naturally very businesslike and peremptory.

He pushed a chair to the other side of the table, placed a small sheet of paper on the table in front of her, and shoved the pen and ink conveniently to hand.

‘‘You can write there, Miss Mitford,’’ he said.

‘‘Thank you,’’ said Caroline, looking rather ruefully at the tiny piece of paper which had been provided for her.

Paper was a scarce article then, and every scrap was precious. She decided that such a piece was not sufficient for her purposes, and when Lieutenant Foray's back was turned, she took a larger piece of paper of sufficient capacity to contain her important message, to the composition of which she proceeded with much difficulty and many pauses and sighs.

CHAPTER XI

Mr. Arrelsford Again Interposes

Nobody had any time to devote to Miss Mitford just then, for a perfect rain of messages came and went as she slowly composed her own despatch. Messengers constanly came in while others went out. The lines were evidently busy that night. Finally there came a pause in the despatches coming and going, and Foray remembering her, looked over toward the other end of the table where she sat.

‘‘Is that message of yours ready yet, Miss Mitford?’’ he asked.

‘‘Yes,’’ said Caroline, rising and folding it. ‘‘Of course, you have got to take it.’’

‘‘Certainly,’’ returned the operator, smiling. ‘‘If it's to be sent, I have to send it.’’

‘‘Well, here it is then,’’ said the girl, extending the folded paper which Lieutenant Foray took and unceremoniously opened.

‘‘Oh,’’ exclaimed Caroline, quickly snatching the paper from his hand, ‘‘I didn't tell you you could read it.’’

Foray stared at her in amazement.

‘‘What do you want me to do with it?’’

‘‘I want you to send it.’’

‘‘Well, how am I going to send it if I don't read it?’’

‘‘Do you mean to say that——’’ began the girl, who had evidently forgotten—if she had ever known—how telegrams were sent.

‘‘I mean to say that I have got to spell out every word on the key. Didn't you know that?’’

‘‘Oh, I did, of course—I—but I had forgotten,’’ said Caroline, dismayed by this unexpected development.

‘‘Is there any harm in my reading the message that I have to send?’’

‘‘Why, I wouldn't have you see it for the world! My gracious!’’

‘‘Is it as bad as that, Miss Mitford?’’ he said laughing.

‘‘Bad! It isn't bad at all, but I wouldn't have it get all over town for anything.’’

‘‘It will never get out of this office, Miss Mitford,’’ returned Foray composedly. ‘‘We are not allowed to mention anything that goes on in here.’’

‘‘You wouldn't mention it?’’

‘‘Certainly not. All sorts of private messages go thru here, and——’’

‘‘Do they?’’

‘‘Every day. Now, if that telegram is important——’’

‘‘Important, well I should think it was. It is the most important——’’

‘‘Then I reckon you had better trust it to me,’’ said Lieutenant Foray.

‘‘Yes,’’ said Caroline, blushing a vivid crimson, ‘‘I reckon I had.’’

She handed him the telegram. He opened it, glanced at it, bit his lips to control his emotion, and then his hands reached for the key.

‘‘Oh, stop!’’ cried Caroline.

Foray looked at her, his eyes full of amusement, his whole body shaking with suppressed laughter, which she was too wrought up to perceive.

‘‘Wait till—I—I don't want to be here while you spell out every word—I couldn't stand that.’’

Caroline had evidently forgotten that the spelling would be in the Morse Code, and that it would be about as intelligible to her as Sanskrit. The Lieutenant humored her, and waited while Caroline turned toward the door and summoned Martha to her. She did not leave the room, however, for her way was barred by a young private in a grey uniform. The newcomer looked hastily at her and the old negress, stepped by them, and asked them very respectfully to wait a moment. He then approached Foray, who was impatiently waiting until he could send the message. He saluted him and handed him a written order, and then crossed to the other side of the room. A glance put Foray in possession of the contents of this order. He rose to his feet and approached Caroline still standing by the door.

‘‘Miss Mitford,’’ he said.

‘‘Yes.’’

‘‘I don't understand this, but here is an order that has just come from the Secret Service Department directing me to hold up any despatch you may try to send.’’

‘‘Hold back my telegram?’’

‘‘Yes, Miss Mitford,’’ and Foray looked very embarrassed as he stared again at the order and then from the young girl to the orderly, ‘‘and that isn't the worst of it.’’

‘‘What else is there?’’ asked the girl, her eyes big with apprehension.

‘‘Why, this man has orders to take back your message with him to the Secret Service Office.’’

‘‘Take back my message!’’ cried Caroline.

‘‘There must be some mistake,’’ answered Foray, ‘‘but that's what the order says.’’

‘‘To whom does it say to take it back?’’ asked the girl, growing more and more indignant.

‘‘To a Mr. Arrelsford.’’

‘‘Do you mean to tell me that that order is for that man to take my despatch back to Mr. Arrelsford?’’

‘‘Yes, Miss Mitford,’’ returned Lieutenant Foray.

‘‘And does it say anything in there about what I am going to do in the meantime?’’ asked the girl indignantly.

‘‘Nothing.’’

‘‘Well, that is too bad,’’ returned Caroline ominously.

‘‘I am sorry this has occurred, Miss Mitford,’’ said the Lieutenant earnestly, ‘‘but the orders are signed by the head of the Secret Service Department, and you will see that I have no choice——’’

‘‘Don't worry about it, Lieutenant Foray,’’ said Caroline calmly, ‘‘there is no need of your feeling sorry, because it hasn't occurred, beside that, it is not going to occur. When it does, you can go around being sorry all you like. Have you the faintest idea that I am going to let him take my telegram away with him and show it to the man? Do you suppose——’’

She was too indignant to finish her sentence and old Martha valiantly entered the fray.

‘‘No, suh,’’ she cried in her deepest and most indignant voice. ‘‘You all ain't gwine to do it, you kin be right suah you ain't.’’

‘‘But what can I do-’’ persisted Foray, greatly distressed.

‘‘You can hand it back to me, that's what you can do.’’

‘‘Yes, suh, dat's de vehy best thing you kin do,’’ said old Martha stoutly, ‘‘an' de soonah you do it de quickah it'll be done—Ah kin tell you dat right now, suh.’’

‘‘But this man has come here with orders for me to——’’ began Foray, endeavoring to explain.

He realized that there was a mistake somewhere. The girl's message had nothing whatever to do with military matters, and he quite understood that she would not want this communication read by every Tom, Dick, or Harry in the Secret Service Department. Beside all this, as she tood before him, her face flushed with emotion, she was a sufficiently pretty, a sufficiently pleading figure to make him most anxious and most willing to help her. In addition, the portly figure of old Martha, whose cheeks doubtless would have been flushed with the same feeling had they not been so black, were more than disconcerting.

‘‘This man,’’ said Caroline, shaking her finger at helpless Private Eddinger, who also found his position most unpleasant, ‘‘can go straight back where he came from and report to Mr. Arrelsford that he could not carry out his orders. That's what he can do.’’

Martha, now thoroly aroused to a sense of the role she was to play, turned and confronted the abashed private.

‘‘Jes' let him try to tek it. Let him tek it if he wants it so pow'ful bad! Jes' let de othah one dere gib it to him—an' den see him try an' git out thu dis yeah do' wid it! Ah wants to see him go by,’’ she said. ‘‘Ah'm jes' waintin' fur de sight ob him gittin' pas' dis do.' Dat's what Ah's waitin' fo.' Ah'd lak to know what dey s'pose it was Ah comed around yeah fo' anyway—dese men wid dese ordahs afussin' an'——’’

‘‘Miss Mitford,’’ said Foray earnestly, ‘‘if I were to give this despatch back to you it would get me in a heap of trouble.’’

‘‘What kind of trouble?’’ Asked Caroline dubiously.

‘‘I might be put in prison, I might be shot.’’

‘‘Do you mean that they would——’’

‘‘Sure to do one thing or another.’’

‘‘Just for giving it back to me when it is my message?’’

‘‘Just for that.’’

‘‘Then you will have to keep it, I suppose,’’ said Caroline faltering.

‘‘Thank you, Miss Mitford.’’

‘‘Very well,’’ said Caroline, ‘‘it is understood. You don't give it back to me, and you can't give it back to him, so nobody's disobeying any orders at all. And that's the way it stands. I reckon I can stay as long as he can. She stepped to a near-by chair and sat down. ‘‘I haven't very much to do and probably he has.’’

‘‘But, Miss Mitford——’’ began Foray.

‘‘There isn't any good talking any longer. If you have got any telegraphing to do, you had better do it. I won't disturb you. But don't you give it to him.’’

(To be continued.)

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Household

THE BLESSINGS OF A RAINY DAY

By a Mother on a Farm

As a farmer's wife, I certainly do appreciate a rainy day! I look at the sky in the morning, and if the sun is getting ready to get up, I plan my work for a clear day. But if it is raining, I begin to think over the things which need a man's hand to work out.

Likely, my husband is growling and complaining, for somehow the rain and wind never do come on just the right day; always it would have been better tomorrow or next week, but not today. Now, a wise wife always knows just what she wants, and knows, too, if she asks for it at the right time, nine times out of ten she gets it. She knows it is positively foolish to ask any man to do anything for her when the hay is down and the weather right to get it in. Either he pleads ignorance, or just refuses to have anything to do with it. And if his fruit is ready to be shipped and the day is bright, he will have neither time nor inclination to pick a few extras for home canning. But when it is too wet for his work, then is the time to get yours done.

Most men get on the couch and have a nice long nap when the sky is "dark and dreary," and do not think of doing the little odd jobs waiting for them, unless they are especially reminded of them. Of course, there are a few exceptions to the rule; but generally speaking, the man must be asked to do these things, and if he has an interest in his home, he will take great pleasure in keeping it attractive. Lots of men are perfectly willing to have a house built well, but that ends the matter, as far as they are concerned. So we must plan to have them keep it in order. Often the windows or screens need fixing, and few women are skilled in the use of hammer and saw; or the rug is worn and needs turning; or there is a rat hole needing attention. There are many things which only a man can do for us.

If these things are left undone, the place soon loses its comfortable, "homey look," and we decide that the people living there are shiftless. Often it is only thoughtlessness on the part of husband and wife, too, for unless a person is hired to do the work, it goes undone.

A very good plan is to jot down these various little jobs as they present themselves to our notice, and when the husband or hired man has a few spare moments, or the day is stormy, suggest that such and such a thing ought to be done. Usually it is done at once, and can then be crossed off the list. The consequence is, from a forlorn, forsaken looking place, with a tumble-down house, we have a comfortable, "homey" house. Just one small job at a time, but every time I could get him, and the thing was done.

My friends often say my husband helps more than most men do their wives, but I try to ask for the things when I know I can get them. Takes scheming and planning on my part at times, but it pays. For instance, with the chickens. He helps me in such a way that chickens are a paying crop now, same as our fruit trees, and I do not have any more of the drudgery work to do than I have with the butter. But it is "rainy days" that gets it done so well. Cleaning and spraying the hen house is another rainy day job that saves me work, for it kills all bugs before they even hatch, and I could not do that alone. It is a man's work, any way, to keep the buildings clean.

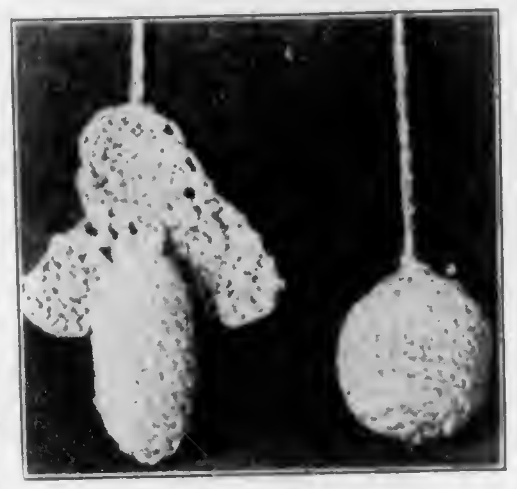
Then another pet scheme is to put the children in the living room with him, when the weather is bad, give them toys and a "party" and shut them in. Then I can go upstairs and make the sewing machine hum! I can get three times as much done in this way as I could if I had to watch the children, give them "drinks," etc. It is good for him, too; keeps a man in touch with his children, and makes him understand some of his wife's problems better, by "tending'" them once in a while.

So on the whole I must say the "thirsty land" does not get all the benefits of a real rainy day.

CROCHETED PENDANTS

By Mae Y. Mahaffy

So many of the dainty crocheted jabots, ties, etc., are now finished with drops or pendants, likewise of crocheting, that a majority of workers will be glad to know just how these little accessories are made. It is not a difficult task at all for anyone familiar with plain crocheting, and several may be made, with but slight effort, in the course of an evening's chat around the fireside.



In the first place, select a crochet cotton, No. 40 or 50, and a small hook. Have a box or roll of cotton at hand, the very whitest being necessary. That found in most medicine chests, absorbent cotton, will be most satisfactory, unless a choice bit of batting is in readiness. Only a small amount is needed.

A ball and flower form are illustrated, and there are numerous ways besides these that the pendants may be arranged. These seem to be the two most popular forms, and are probably easier to execute than more complicated ones. To make the ball, chain three stitches and join in a circle with a slip stitch. Chain one, and in the top of each previous stitch place two single stitches. In the next row place two single stitches in every other stitch, and continue thus for three rows. Then crochet two more rows, stitch for stitch. You will now have a small cup-like shape, into which a bit of the cotton is crowded, making it as firm and shapely as possible. Proceed to crochet the remainder of the ball by narrowing, first skipping every third stitch, and then every other one, endeavoring to make this end of the ball appear as nearly as possible like the first. When only one stitch remains, chain a length sufficient to attach the ball to whatever article it is to decorate, and secure the thread by slipping it thru the last loop.

The flower heart is made like the ball until the center is reached, where more rows of straight crocheting are utilized to give additional length. It is then narrowed off as before, after filling with cotton, but a length of thread is left with which to crochet the chain later. The petals are now made by crocheting a center as before, widening until there are 27 stitches. Turn by chaining one, and making a single stitch into each of nine of the former row; turn again, chain one, and crochet seven single stitches into the row of nine; turn, chain one, and crochet five singles into the row of seven; turn, chain one, and crochet three singles into the five, and then fasten off with a chain, one single, and a chain, securing the thread neatly. Each of the other petals are made in like manner on the remainder of the 27 stitches, it being necessary to tie the thread into place after fastening off in each case. Now slip the loose thread left on the pendant thru the center of the petals, taking a stitch thru to hold it in place, and chain the stem.

These pendants will wash, if handled carefully, and pulled into shape at once. They may be made somewhat larger and of coarser cotton for edging curtains, bedspreads, etc.

REGULAR OUT-DOOR EXERCISE FOR FARMERS' WIVES

I would like to emphasize the necessity of regular out-door exercise for farmers' wives. So many of us spend considerable time out of doors during the summer and fall, when the weather is pleasant, but when the cold winds begin to blow and the snow flies we are apt to shut the house up more closely than we should and hardly get out, unless we go in a rig.

For the woman who does not have too much work, and who lives on a road that is kept well broken out, there could be nothing better than a short walk, taken every day at a regular time, gradually increasing the distance a little every day that weather and work would permit. Of course, one must dress warmly and comfortably, with short woolen skirts and leggings or boots. Then walk as tho you were out for pleasure instead of doing a duty, thinking not how the wind blows and how cold it is, but thinking how exhilarating the winter air is and how good it is to be alive, and ten to one, if you did not start out in that mood, things will look very much brighter to you after your brisk walk in the open air. Walk with shoulders back, chest out, head up and mouth closed. Walk briskly but not hurriedly, and walk every day that the weather will permit. Never mind if it does snow some and the wind blows a plenty. Do not stop until there comes one of those regular old howlers that makes it impossible to get out.

I am situated so that the straight walk is almost out of the question for me, and doubtless there are other women who would find it impracticable. We live on a cross-road and are back from the main road about one-eighth of a mile. This makes walking impossible, for of course few teams travel our road. The house is some distance from the road, surrounded by trees, and it is often spoken of as a dreary place. When we moved from town onto this farm, many of my friends said to me: "How can you ever live in such a lonesome place?" And altho we have survived for five years, they still offer their sympathy because I am compelled to lead such an isolated existence. But the fact is that I have seen very few lonesome days since we came here. I could not tell exactly why that is so, for it certainly is an out-of-the-way corner of the world. Perhaps the fact that it was my husband's boyhood home and the home of his father and grandfather helps to make it more interesting to us. Anyway, I never did care very much for backdoor gossip, and would just as soon go out and visit with my chickens as to listen to some of it. And that is exactly what I do, fix them a good warm breakfast, take a dish of warm water and start on my first walk quite early in the morning. When I reach my destination I find my friends very glad to see me, and they all seem to enjoy my morning talk with them, and seem to believe it to be grand, good, common sense (doubtless that is why I enjoy it so much, because they let me do most of the talking and are such good listeners).

After I have given them their breakfast and seen to it that they have plenty of litter to work in, I leave them. I visit them three times a day, just after noon and about four o'clock in the afternoon, always taking food and water and milk. Of course, if the weather is too severe my husband attends to them for me; but every possible day I do this, and plan to spend considerable time when out. Sometimes I follow other paths, and go to the horse barn to visit the horses, or go to other barns and look at the cattle. We carry about 50 head of horses and cattle, and it is very interesting to me to look them over occasionally. When I make my trip just after dinner, I usually go to the mail-box at the end of the drive, and when walking is good I frequently "go over on the road," and call on some of the neighbors. But my every-day routine consists of the trips to the chicken house.

Of course, it is not always easy to leave my work and go out, but I find the work goes enough easier to pay, my lungs are full of fresh air, and my general health is kept in good condition thru the winter months. Then, too, when I go for a long drive I am not so apt to take cold as I would be if I had not had the regular out-door exercise. Possibly some other woman might find these simple plans helpful. I do not depend entirely on the chickens for company, but believe in having some of the best books and magazines in the home that one can get, and who needs them more than the farmer's family? In these ways we have helped to make living, where many would have found it irksome, both pleasant and profitable.—Barbara Hill, Erie Co., Pa.

WHAT THE CHILDREN NEED

There are 29,500,000 children in the United States under 15 years of age who need all the care that their mothers can give them. When the mother lets her little ones go out to school, they are no longer directly under her protection and influence, and she ought to have a voice in the election of the school board that chooses the teachers into whose charge she tenderly trusts the children. She ought to know whether the room is warm and the air good and the water pure, just the same when the children sit in the school house nearly all day as when they cling about her skirts at home. In Pennsylvania, the women do not have even this right, altho they do have the school ballot in 34 other states. We can not blame the men—they are doing all they can for the good of the race, but there is some business that they can not do if they wanted to. The women should begin to do their share of the public housekeeping. In one of the large cities of this state there were, until very recently, 14 bartenders on the school board. Does anyone think that if women had had the ballot in Pennsylvania, such men would have been elected to direct the education of the children and growing boys and girls? One of the benefits of woman suffrage in all the states where women vote is that better men are selected for office.

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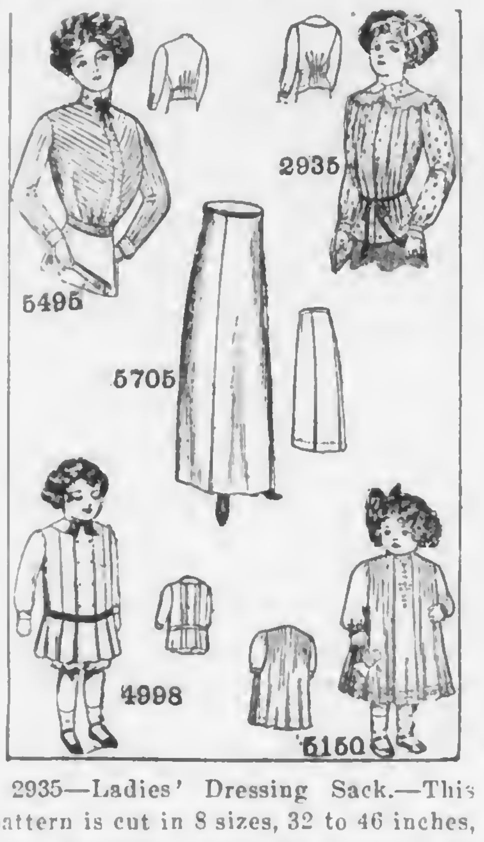

2935—Ladies' Dressing Sack.—This pattern is cut in 8 sizes, 32 to 46 inches, bust measure. Size 36 requires 3⅞ yards, 27 inches wide. Price of pattern, 10 cents.

5705—Ladies' Four-Gored Skirt.—This pattern is cut in 5 sizes, 22 to 30 inches, waist measure. Size 24 measures 3½ yards around lower edge and requires, without panel, 4 yards of 44-inch material. Price of pattern, 10 cents.

5495—Ladies' Shirt Waist.—This pattern is cut in sizes 32 to 42 inches, bust measure. Size 36 requires 2 yards of 36-inch material. Price of pattern, 10 cents.

4998—Boys' Russian Suit.—This pattern is cut in sizes 2, 4 and 6 years. Age 4 requires 3 yards, 36 inches wide. Price of pattern, 10 cents.

5150—Children's Tucked Dress.—This pattern is cut in sizes ½, 1, 3 and 5 years. Age 3 requires 1⅞ yards of 36-inch material; 3 yards of insertion and 4½ yards of edging. Price of pattern, 10 cents.

Book-Marker.—You've seen the tiny wire clips of varying shapes for holding together several sheets of paper. Well, try one for a book-marker, and see if it's not more satisfactory than anything of the kind you've used yet.—S. Virginia Levis.

Fern Dish.—For the fern dish, when everything else had failed, we planted slips of what is commonly called "crow's foot," or "pickle-plant," and which thrives easily. It is removed to the window after every meal, and turned around every day to insure even growth. It is the most satisfactory centerpiece we have ever had.—S. Virginia Levis.

COUNTY NOTES

Putnam Co., N. Y. (S. E.), Jan. 10.—Weather mild; occasional rains and cold waves. Good hay, $24 ton; eggs, 45c doz.; Butter, 35c lb.; fowls, dressed, 18c lb. Farmers busy threshing rye. Preparing to fill ice houses when the zero weather arrives. Putnam Valley Grange met January 10; installation of officers.—Wm. Seims.

Bedford Co., Pa. (S. C.), Jan. 10.—Weather very wet; only one snow, about five inches deep. Horses scarce, selling at from $175 to $200. Grain looking good, altho freezing weather is hard on it. Good indications for fruit the coming season. Apples worth 75c bu. The open winter has given farmers a chance to do lots of plowing.—N. F. Richards.

Washington Co., Pa. (S. W.), Jan. 10.—Warm, rainy weather. Beef cattle scarce. Good butchers, 6½c to 7c; fresh cows, $45 to $65; hogs, 11c lb, dressed; chickens, 22c dressed; butter, 35c; eggs, 32c for fresh; packed, 27c. Wheat looking good. Farm work in good condition for winter. Roads bad, on account of rain and warm weather.—R. M. Day.

Montgomery Co., Md. (C.), Jan. 9.—Weather mild and open, with frequent rains. Live stock selling unusually high. Steers, 8½c on hoof; corn, $3.80 bbl.; hay (timothy), 60@80c cwt. Poultry and eggs in great demand. Eggs, 36@40c doz. Potatoes scarce, 65@75c bu. General conditions very good. Most land for corn plowed. Farmers busy clearing and pruning. No ice houses filled.—Prof. S. D. Gray.

Northumberland Co., Pa. (E. C.), Jan. 10.—About 14 inches of snow before Christmas; weather now cold. Live stock in good condition. Prices good, wheat bringing $1; corn, 60c; rye, 70c; oats, 40c; pork, 10c; buckwheat, 80c; potatoes, 65c. Farmers gathering next summer's firewood. A good many sick; mostly grip.—R. J. Speer.

Carbon Co., Pa. (E. C.), Jan. 9.—Weather very mild. Snow day before Christmas. Rainy and warm since. Prices are good here, owing to good local markets afforded by near-by mining towns. Potatoes are main money crop. Potatoes, 75c; butter, 48c; eggs, 45c; milk, 8c; good dairy cows, $50@65. Farm work well advanced. Farmers hauling manure from mines. Fertility of farms constantly increasing.—Brice Brenckman.

Harford Co., Md. (N. E.), Jan. 7.—Weather very mild. Snow and good sleighing at Christmas, but soon moderated. Live stock looking exceptionally well, owing to the very large crops of corn and clover hay. We find some Hessian fly in early wheat. Poultry and veal calves both high. Fresh cows off a little, owing to the abundance of milk in section. Many farmers have taken advantage of the fine weather for plowing and hauling out their manure. We are beginning to get worried about the ice crop.—D. G. Harry.

Armstrong Co., Pa. (S. W.), Jan. 7.—Weather varied, with rain, snow, slush. Rather high temperature. Fresh cows scarce and dear. Beef cattle, 5c lb.; hogs, 8c to 10c, dressed. Hay plentiful, $16 ton for No. 1 timothy. Chickens, 15c lb., live weight.; cabbage, retail, 2c lb. Work progressing slowly. Roads blocked with snow drifts in many places.—Arthur R. Allshouse.

Ocean Co., N. J. (C.), Jan. 4.—Weather mild for January. Eggs, 36c; poultry, 15c; butter, 35c; fresh cows, $50; hay, ton, $20; corn, bu., on cob, 60c. Live stock on decrease. The acreage of crops are planned for about same as last year. Labor is scarce for farm work. Prospecting for gas or oil is taking the attention of most land owners. Work

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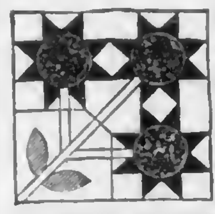

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is well advanced for the season. The warm weather is pushing the fruit buds too fast for the season, which may cause serious injury.—C. M. Rorer.

Lycoming Co., Pa. (N. C.), Jan. 8.—Weather wet; very heavy rains, followed by high winds. Horses bring good prices, but not in much demand now. Cattle buyers going thru, buying all kinds at good prices. Fresh cows, $45 to $60; yearlings, $14 to $18. Registered cattle very high. Hog cholera killed hundreds of hogs in this vicinity, making brood sows, pigs and shoats in great demand at high prices. Wheat looks fine; acreage a little above the average. Rye looks well. A great deal of fall plowing done. Roads bad, owing to open winter.—Clyde E. Hall.

Chautauqua Co., N. Y. (S. W.), Jan. 4—Mild temperature. Not much stock changing hands. Cows, $40 to $75; hay, $14 at barn; potatoes, 60c; apples, 50c; horses, $100 to $200; eggs, 32c; chickens, 12@13c; pork, dressed, 10c; oats, 44c; corn 62c; wheat, $1. Work well along. Most everyone is trimming grapes, apples and peach trees. But little snow, and not much frost. Some plowed up to Christmas.—J. L. Barber.

Perry Co., Pa. (C.), Jan. 6.—Weather mild, with a few brisk days. Raining. Live stock looks well. Wheat looks well at present. All stock high and scarce. Virginia colts sold a month ago for $107 to $176. Beef, dressed, 8c to 8½c; pork, 9c; chickens, 10c; turkeys, 17c to 18c; eggs, 26c; butter fat, 32c; Hay, $12 to $15 ton; bran, $30 ton. No straw sold in this section. Work as usual for winter, cutting wood, tending stock and visiting; couldn't expect much else. Measles in this neck of woods.—Samuel B. Swartz.

Veterinary

(Conducted by W. C. Fair, V. S.)

(Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also name and address of writer. Initials only will be published. When reply by mail is requested, it becomes private practice, and a fee of $1 must accompany the letter. This is one of the most valuable columns of the paper and we invite readers to make use of it. Clippings from this column, when properly preserved and classified, would make one of the most valuable medical symposiums a [illegible]

Splint.—I have a 2-year-old colt that has a small hard bunch situated 2 inches below knee, on inside of left fore leg. When this colt walks I am unable to detect any lameness, but when trotting he is quite lame. H. G., Scranton, Pa.—Apply 1 part red iodide mercury and 8 parts fresh lard to bunch, once a week. It will be necessary to give him 3 or 4 weeks' rest.

Fistulous Tumor.—I have a horse that bruised shoulder by working in a bad fitting collar; now pipes have formed, and I am unable to effect a cure. I have watched the veterinary column, thinking perhaps I might find a parallel case which you prescribed for, but have not noticed one. H. J. S., Cattaraugus, N. Y.—Put some finely powdered sulfate of copper in a gelatine capsule and push it to bottom of tumor and leave it there; this will soon slough out pipe (sinus); then apply 1 part iodoform and 4 parts boracic acid, every day or two. It is possible that some surgical work should be done on him, cutting out all unhealthy tissue.

Chronic Looseness of Bowels.—My pony has chronic bowel trouble. About 2 months ago I traded for 7-year-old pony mare. Her bowels have been very loose ever since. I gave her ½ lb. Epsom salt at a dose, once a day, for 3 days. It made her no better and not any worse. I had her teeth examined. The veterinarian pronounced them all right. She is in fair condition and is fed good oats and timothy. J. W. S., Girard, Pa.—Chronic bowel troubles are not easily controlled. However, your pony will be benefited by giving her a dessertspoonful ground ginger, a tablespoonful of ground gentian and a teaspoonful powdered catechu at a dose in oats and bran, 2 or 3 times a day.

Bloody Milk.—Some 6 months ago my cow had a calf and has remained barren ever since. For the past 3 weeks she has been giving bloody milk. Her udder does not have the appearance of having been injured, but two of her teats have obstructions in them. The blood usually comes when I am stripping her. Can a case of this kind be helped? G. H. C., Woodstown, Pa.—Give your cow ½ oz. powdered nitrate of potash and 1 dr. chlorate of potash at a dose in feed, twice a day. Apply camphorated lard every two days. If you think her food supply is too rich, reduce it. Careful milking is imperative. It is also important that you give her a good soft bed.

Worms—Indigestion.—I have several old hogs that have not been thriving for some time. Lately they have been passing worms. What can I give my spring pigs to make them thrive? One of them is troubled with swollen joints. R. B. C., Sandy Lake, Pa.—Give each hog ½ oz. fluid extract spigelia and ½ oz. fluid extract senna at a dose every 5 or 6 hours until they purge freely. If you believe that they do not get rid of all their worms soon, treat them again 10 days later. Give your spring pigs 10 grains powdered nitrate of potash and 2 dr. ground gentian at a dose in feed, night and morning, until they commence to thrive. I also suggest that you salt their feed. They should have plenty nutritious food.

Light Milker.—My cow is on fairly good feed but does not seem to thrive. Can you tell me how I can bring her back to her normal flow of milk? G. C. F., Euclid, Pa.—Give her 1 lb. of Epsom salt in 3 pints of tepid water as a drench—one dose only. Also give a tablespoonful powdered nitrate potash and 1 oz. ground gentian at a dose in feed, twice a day. Her food supply should be changed. Drugs will not help in a case of this kind. Give her 1 oz. ground gentian, ½ oz. powdered cinchona bark and 1 dr. ground nux vomica at a dose as a tonic in her feed, twice a day.

Holds Up Milk.—My 5-year-old cow is healthy and in good condition, but holds up her milk. M. E. F., Harmony, Pa.—First of all, let us understand that excitement of any kind will have a tendency to produce this condition in dairy cows. Feeding at milking time, allowing cow to eat while she is milked, also quietness and kindness seem to overcome this vice or habit.

Handsome Calendars.—The International Harvester Company calendars for 1913 are like the annual circus, "better and more beautiful than ever before." These calendars are tasty and attractive in design and handsomely printed. They would serve as an ornament in any farm house, in addition to serving their useful purpose as calendars. The Champion calendar portrays a healthy, vigorous farm lassie in play with as vigorous a Collie pup, while the mother Collie trots along at her side in silent but thoro enjoyment of the frolic. The Osborne calendar is a particularly attractive picture of two boys enjoying the pleasure and adventure of preparing a campers' supper by a night camp fire. The coloring is artistic and realistic. The McCormick calendar pictures the sturdy blacksmith by his blazing forge, shaping a horseshoe. The picture carries the appeal which grips every man or woman who admires mechanical skill and workmanship. The Deering will appeal to the boys, with the vivid picture of a group of youngsters engaged in an exciting game of ball. The expressions on their faces show the combination of serious effort and thoro enjoyment which makes the great American game the King of sports. The Plano appeals to the lover of nature, with its rugged mountain scenery and vivid colorings, shows a serious old grizzly bear crossing a mountain stream on a bridging log. All of these calendars are done with an artistic finish which will appeal to all. They may be secured free upon request from your nearest dealer in these harvesting machines. Say that you are a reader of Pennsylvania Farmer.

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AGRICULTURE THE KEYSTONE OF NATIONAL PROSPERITY
ESTABLISHED 1880 PUBLISHED WEEKLY
VOL. 33.—No. 5. PHILADELPHIA, PA., SATURDAY, FEBRUARY 1, 1913. 50 CENTS A YEAR.

Headle Dr. T. J. '13 Rutgers College

Reforestation of the Wood-Lot---By J. Hugh McKenney,

Ontario, Canada

Hitherto the farmer, like the lumberman, has regarded the timber as a resource to be utilized as necessity or convenience might require, once for all, instead of as a crop to be harvested at maturity, while making due provision for its reproduction. To make it of permanent value, the wood-lot must be "farmed" in the strict sense of the word. It is just as false economy to exhaust timber-bearing land and rob it of future productiveness, as to destroy the fertility of the field by continuous cropping without any attempt at restoration by manuring and judicious crop rotation. Too often the wood-lot is allowed to lose its forest character. The old trees are cut away in such numbers as to leave large, clear spaces, where a thick growth of grass or weeds replaces the light, porous forest soil. This leaves a condition of shade, soil and moisture unfavorable to the natural reproduction of young trees. The process of destruction is completed by pasturing cattle or other live stock in the wood-lot.

These do damage in two ways: they not only consume or trample down the young trees, but pack the ground hard. The original forest floor is light, loose and spongy; it can, therefore absorb and retain large quantities of moisture, the seeds of the trees readily germinate and supply a thick growth of seedlings to fill the vacancies left by the axe. On the other hand, where the soil is grass grown, exposed and trampled hard, the seed that may find their way into such unpropitious conditions can not obtain the requisite nourishment and protection. This state of affairs habitually permitted means that the ultimate destruction of the woodland is only a matter of time.

Now, then, how are we going to remedy all this? What system shall we pursue each year in order that the best results may follow? Drawing from my own experience in this connection, I would first go to work systematically. I would take a tract of the wood-lot large enough that the culls, poor material and down timber would furnish a year's supply of fuel. In the culling process it is of vital importance to preserve the shade by avoiding too large breaks, such as would be caused by removing a number of trees in the same immediate neighborhood. I would, therefore be guided by this fact in leaving enough large or partly grown trees in the vicinity to restore by the spreading of their branches the canopy overhead. But as it is desirable to encourage only the best varieties, the inferior kind should be weeded out, unless obviously needed for this purpose. Having in this way reduced the composition of this tract to those varieties which I wish to retain and reproduce, another section is staked out for culling the next winter, and so on until the whole area has been gone over.

A WOOD-LOT CARED FOR BY THE FORESTRY DEPARTMENT OF SYRACUSE UNIVERSITY

A great deal can be done towards aiding the natural process of reproduction. A little judgment and caution should be exercised in cutting and removing the mature trees so that as little injury as possible may result to those in an earlier stage of growth. For instance, by felling a tree in one direction, rather than another, or making a slight detour in the wagon track in removing the wood, it may be easy to spare a group of thriving young seedlings, which would otherwise have been crushed. This may seem like a small matter, but it is precisely the spirit of heedless indifference to such small matters which is responsible for much of the evil resulting from forest destruction.

Where the cutting has been so excessive as to leave considerable vacancies and intermittent grass-covered spaces with no young trees springing up, replanting will be necessary. If this is to be done successfully, there are a few essentials that must be observed. Trees set out some distance apart, while they will be available for fuel, will not furnish marketable timber for manufacturing purposes, owing to the branching of the limbs near the ground. It is the dense growth of the forest which furnishes tall, straight trunks. There is a constant struggle upward for space and light. Tho "there is plenty of room at the top," a very large proportion of the aspirants die in the effort to get there, being overtopped by more vigorous or more fortunately placed competitors. The result of this crowding and crushing is that the survivors possess clean pruned trunks, furnishing timber of the desired length and freedom from knots, suitable for the purposes of the artisan or builder. But the struggle for the vantage ground of the upper air is a time of slow growth. The art of the forester consists in regulating conditions so as to secure the close contact required in the early stages of development to obtain a straight and upward growth and afford mutual protection. Subsequently, by judicious thinning, room can be made for steady expansion. By thus assisting nature and forestalling the slow crowding-out process by which forest trees come to maturity, the period of growth can be very materially shortened.

Where a small area is to be set out, transplantation of seedlings from the forest may be successfully undertaken. For this purpose it is not advisable to use trees much over a foot in hight. Some people imagine that in planting well-grown saplings they can save several years in the growth of a tree. This is a loss in time and labor. It is much easier to

FORESTERS AT WORK IN A FARM WOOD-LOT

transplant a small tree than a large one; besides, however carefully moved, the sapling usually makes little progress for some years, as all its vitality is needed to establish itself in its new location, while the smaller tree is soon domiciled and quickly resumes its growth. Moreover, it is a difficult matter to secure a forest tree of a few feet in hight without tearing of much of the fine fibrous roots. For this work, I prefer those taken from the edge of the woods, or comparatively open places, as they will stand removal better than trees growing up under a dense cover. It is also important that too much time is not allowed to elapse between the "digging up" and the "planting" of the trees. In case some delay is unavoidable, the roots should be kept moist, and protected from exposure to sun and winds, so as to preserve their vitality.

Where it is desired to stock large areas with the minimum of labor and expense and the surest results, it is preferable to raise the trees from seed. This may be done either on the place where they are intended to remain or in a small nursery, from which they can afterwards be transplanted. The latter is the better system, as close growth in the earlier stages is necessary, and the great majority of seedlings will, in any event, have to be removed from the spot where they germinate.

In the work of culling and replanting, it is well to note that experience favors mixed varieties rather than close confinement to any one kind. Some species require light, others thrive in shade. Of the latter, hard maple, beech, pine, spruce and chestnut are examples—all trees of dense foliage. The former, such as elm, oak, walnut, ash and cedar, have a comparatively thin leafage, and demand ample light in order to flourish. The shade-enduring kinds should be planted in larger numbers than the light-demanding species.

There are some other good reasons why certain varieties should be planted and preserved. Where the soil is at all adapted to it, there is no better tree to grow than the hard maple, which, in addition to its timber value, yields an additional return in sugar and syrup. It has the further advantage of being a common tree and easily obtainable. The white ash is a rapidly-growing tree, the timber of which is greatly in demand, even if cut when small. The shellbark hickory is another tree that gives a comparatively quick return for the labor bestowed, as the young trees are marketable, and the yield of nuts is likewise a source of profit. It will not grow well, however, on poor, sandy soil.

Phenomenally valuable among trees is the black walnut, but it is many years before the timber attains the rich, glossy color that renders it specially prized for cabinetmaking. Unless the owner is willing to plant for posterity, he will naturally prefer more rapidly maturing varieties. The basswood, if obtainable, is a desirable tree, being a fast grower and yielding timber which is much in demand for a variety of purposes. The best honey is produced from its flowers. White or rock elm furnishes a quality of timber which is much sought for, but its liability to attack by insect pests is a drawback which must not be overlooked. Another tree that should be more freely planted is the chestnut, the nuts of which are always salable. When planted close and thinned, the cullings can be disposed of for ties and posts. In sections where the blight is prevalent, however, it would be unwise to plant too extensively at any one point.

DELAWARE GRAIN GROWERS' MEETING

The sixth annual Delaware Corn Institute, held at Wilmington, January 15-17, was the best in the history of that association. The corn show was good in number and variety of exhibits, and showed a quality which would compare favorably with any corn-growing state. An excellent program of practical discussions of the various phases of grain growing was given, and intense interest was shown by all present. The general interest shown by the people of Wilmington, and the splendid hospitality extended by the Chamber of Commerce, thru its hustling secretary, Mr. R. J. Maclain, were features indicating the closer relationship between the country and city people, and the recognition of the importance of agriculture to the welfare of city and country. There were 125 present at the corn banquet on Thursday evening, and the talks helped to establish a better understanding between the produce growers and the city consumers.

The corn show brought out keen competition. Prizes were liberal and attractive, but the effort at improvement for the sake of improvement was the highest motive of the exhibition. The sweepstakes prize, a Guernsey bull calf, donated by the Delaware Agricultural College, was won by Alonzo Whitlock, of Odessa, New Castle County, on the best exhibit of 50 ears. Mr. Whitlock was a big winner, getting first on best 50 ears from his county, on best 20 ears of white, best 20 ears of yellow, best 10 ears of white, best 10 ears of any variety and best single ear. Other first prizes were awarded as follows: J. C. Cowgill, on best 50 ears from Kent County; Naudain & Son, on best 20 ears of mixed corn; H. L. Dilworth, best 10 ears of yellow; T. C. Eastburn, best 10 ears of mixed; J. C. Phillips, best 10 ears of any variety or color from Kent County; S. Davis, best 10 of any variety from Sussex County; F. C. Phillips, best ear, any variety, Kent County. Variety prizes were awarded as follows: Hickory King, Ralph Jefferson; Hundred Day Bristol, F. C. Bancroft; Johnson County White, A. S. Whitlock; Boon County White, J. T. Shallcross; Leaming, H. L. Dilworth; Delaware, Naudain & Son. All the prize-winning corn will be sent to the National Corn Show, where it should bring honors to the Delaware growers.

High Yields of Corn.—Prof. Lyman Carrier, Agronomist of the Virginia Experiment Station, discussed factors in securing high yields of corn per acre. He named preparation of seed bed, care of seed and cultivation as the three leading factors. Of these, selection and improvement of seed have been most neglected. He advised every farmer to be his own seed grower. First, select a variety that is adapted and acclimated to your locality. Establish a type for that variety, and then select and improve to strengthen and perpetuate that type. Some inbreeding may be necessary to fix the most desirable characteristics. Such inbreeding is not dangerous when carefully and judiciously handled. When the selected strain is improved to the maximum point, it may be necessary to bring in a non-related strain of the same variety to effect further improvement. Such a cross will give increased vigor temporarily, but the product should not be used in breeding for more than two years.

Corn Improvement.—Prof. A. E. Grantham, Agronomist of the Delaware Experiment Station, gave an intensely interesting and instructive talk on corn improvement. He took figures on present status of corn growing in Delaware, as reported by growers, and discussed various methods of improvement. He showed that the average yield per acre in the state at present is about 60 bushels; the average maximum yield, 76 bu.; average pounds of fertilizer per acre, 336; average cost of fertilizer per acre, $2.98; average total cost of production per acre, $7.02. Taking these figures and a statement of present methods, he showed how improvement might be effected. The records of Weather Bureau show that Delaware gets the largest amount of rainfall in July and August, just at a time when it is of greatest benefit to the corn crop. The soil is naturally adapted to the crop, except in the southern part of the state, where more drainage is needed. Among the improvement methods needed are more general use of leguminous cover crops and more systematic rotations. Rotations should be planned to provide nitrogen thru legumes, provide the best market crops and save labor expense. A good four-year rotation suggested was corn the first year, followed by tomatoes, potatoes, sweet potatoes or soya beans, according to location and preference, for the second year, and this followed by wheat and clover for the third and fourth years.

Lime and Legumes in Soil Improvement.—Dr. J. B. Lipman, Director of the New Jersey Experiment Station, discussed the relation of lime and legumes to soil improvement. The substance of this talk should be preached in every agricultural section of the East. It dealt with the problem of maintaining a supply of available plant food in the soil, and increasing that supply under constant cropping. Lime and green manures were given as the basis of such work. Instances were related of actual results obtained from this combination. A field near Freehold, N. J., was cited, which had been cropped 25 years without an application of manure. Twenty-five years ago it would not produce 14 bushels per acre of corn. Now it will produce 100 bushels per acre, and yields proportionate crops of potatoes.

In discussing the use of lime, Dr. Lipman showed the advisability of ground limestone or burned lime, according to the nature of the soil. At present, ground limestone can not compare with burned lime, because of the difference in price; but when prices compare more favorably, we will use more ground limestone. In general, on heavy soils and with a fair amount of humus, burned lime is to be preferred, because it furnishes the greater amount of carbonate of lime per unit, and has a beneficial effect in breaking up the soil. On light soils, deficient in humus, ground limestone is to be preferred, because it does not "burn out" humus so rapidly. An excess of burned magnesia in the soil is always in danger of injuring crops, but magnesia lime is the best form under certain conditions. As to quality of lime to apply per acre, it has been estimated that clover soil loses from 25 to 30 bushels of lime every five years, and this amount should be supplied. More is required where fertilizers are used excessively. Apply twice as much ground limestone per acre as would be required were burned lime used.

Green manure crops must accompany applications of lime to supply humus. Select the green manure crops according to location, nature of soil and needs of the soil. Preference should usually be given to the deep-rooted legumes, particularly so if sub-soiling effect is desired. On this basis the best green manure crops, in order named, are alfalfa, the clovers, vetches, cowpeas and boy beans, field peas and beans. Have these crops on the ground between commercial crop seasons. Give as great pains to growing a good manure crop as you would a commercial crop. Fertilize them and give them lime. The essentials in growing green crops are lime, phosphoric acid and inoculation. Do not overlook the latter; inoculate early and thoroly.

Marketing Corn Thru Live Stock.—Prof. H. Hayward, Director of the Delaware Experiment Station, discussed the feeding of live stock as a means of marketing the corn crop. He showed the financial advantage of marketing corn thru horses, cattle, dairy cows, sheep and hogs. His talk was full of practical and valuable suggestions. It will be published in full in an early issue of Pennsylvania Farmer.

Officers were elected as follows for the ensuing year: President, J. W. Killen, Felton; vice-presidents: New Castle County, James T. Shallcross; Kent County, G. Garrison; Sussex County, W. S. Davis; secretary-treasurer, A. E. Grantham. A motion was passed to appoint a committee of three to present to the state legislature the need of a larger appropriation for use by the corn association. This show and meeting marks this association as one of the best farmers' organizations of the state. Every grain grower and general farmer in the state should become a member and give his assistance to pushing the work of grain improvement.

TOXINS AND FERTILIZERS

Perhaps plants do excrete toxins that are unfavorable to that particular plant, but the notion that fertilizers simply render the toxin innocuous needs a good deal more of proof. Take a pure sand, made of pulverized quarts with no plant food in it, and certainly no toxins, and plant seed in it and water with distilled water, and you will get no growth except of the stored food in the seed itself. But add a complete fertilizer to that sand, and you get growth simply because the fertilizer has supplied what the sand lacked for feeding plants.

Nor do I believe that there is any toxin excreted by plant roots. No crop is entirely removed from the soil, and its remnants decay in the soil, and doubtless plants will finally object to living on their own decay, and the so-called toxin is simply the result of the decay of that particular crop. No secretory organs have even been shown to exist in plants. Carbon dioxide does escape from the roots as a sort of exhalation, but this is not a toxin to plant life, but a necessary thing in the air for the assimilation of carbon by the green granules of the protoplasm. Then the statement that no soil is deficient in plant food is simply nonsense, for chemical analysis of a great variety of soils shows that they vary wonderfully. Years ago, when I was connected with the North Carolina Experiment Station, we undertook a series of experiments to test the effect of different fertilizing elements, singly and in various combinations. For this purpose we selected the land in the Pine Barrens, because a chemical analysis showed that the soil was lacking in nearly all the elements of fertility, and we assumed that in such a soil, that had never been altered by cultivation, we could get the true results from the fertilizers. And that the addition of the fertilizing materials gave a variety of results on a soil whereon crops had never been grown, showed that it was the adding of plant food in various forms that made the difference.

Varying amounts of the different elements in combination gave varying results. While analysis showed that the sand of that region had hardly any potash in it, an addition of potash gave very little result, while phosphoric acid and potash together gave fairly good results. But the best results were had only when nitrogen was added to the phosphoric acid and potash, and the results varied decidedly when the percentage of nitrogen or phosphoric acid or potash varied. If the use of fertilizers is only to act as an antidote to certain poisons, a mixture of 1 percent of the various elements would be as effective as a different percentage. There is nothing more certain than that an analysis of a fertile soil, made at the beginning of its cultivation and another analysis made after years of single cropping on that land, would show that there has been a using up of the plant food in the soil, and it has become less productive because of this robbing of the plant food in the soil.

It is true that there are unproductive soils in which analysis will show that there is a great deal of plant food, but locked up in an unavailable form. There are clay soils abounding in the double silicate of potash on which an application of soluble potash salts has a very decided effect on plant life, simply because the potash in the soil could not be used by plants. There are soils in eastern North Carolina abounding in phosphoric acid on which a new application of acid phosphate has no profitable effect, while in the upland sections of the state phosphoric acid is one of the most essential plant foods to use in a fertilizer. In the lower Mississippi Valley potash in an available form is so abundant in most soils that no application of potash in a fertilizer does any good. It is perfectly evident to every thoughtful farmer that the fertilizers do good by supplying what plant food is deficient in an available form in the soil, and it will be hard to convince such men that their poorest soil is just as rich as their most fertile field.—W. F. Massey, Wicomico Co., Md.

The above kindly criticism on a recent editorial has been submitted to us. We fear that Mr. Massey has misconstrued some of our statements. We do not put forth the toxin theory as a doctrine which should be immediately recognized, nor are we ready to accept many of its teachings. We do hold, however, that recent experimenting has indicated the truth of many of the toxic principles to such an extent that further study should be made before laying the theory away as absurd. The facts brought out in the recent efforts to artificially produce live tissue are so strikingly parallel that they further substantiate this claim.

In an experiment being run at the Delaware Experiment Station, peach trees have been grown for several years in concrete pits filled with pure sand, to which no fertilizer or organic matter in any form has been added. These trees have shown a perfectly normal growth, as may be seen in the illustration on page 2 of our issue of November 16.

Mr. Massey is perfectly correct in his statement that soils vary wonderfully in their food content, but the Bureau of Soils at Washington reports that they have found no agricultural soil which is absolutely deficient in plant food. The availability may vary as does the quantity.

This fact has been known for a great many years, during which time the question has been repeatedly asked: "Why, when all soils contain such an abundance of plant food, should an application of fertilizer, which is infinitessimal in amount in comparison to that which is already in the soil, show results?" The toxin theory is an effort to answer this question, which so far has not been satisfactorily answered.

It is a theory years ahead of its time, but one which demands a great deal of study and experimenting before it can be put aside as ridiculous.

HAY BARN ON OVERLOOK FARMS, MONTGOMERY CO., PA.

A FINE NEW JERSEY SHOW

The New Jersey legislature last year appropriated $10,000 to advertise the agriculture of the state. Farmers may be interested in knowing how some of this money was spent and what sort of showing was made. New Jersey outstripped all competitors at the American Land Show at New York. No one visiting the show could fail to be impressed with the beauty and completeness of the exhibit.

The state took a space 55x40 feet on the main floor of the armory, paying $5,600 for it. This space was arranged as a garden, to typify "the Garden State.". It was surrounded by privet hedge, was intersected by paths, bordered by boxwood, and the garden effect was further heightened by a pergola of rough-trimmed cedar poles. In the "garden" were leeks, turnips, onions, endive, celery, kale and many other vegetables growing in pots, and flowers were not wanting to add to the illusion. A little cranberry bog, showing just how the berries grow, how the land is flooded in winter and drained in summer, was one of the interesting spots in the garden.

The most striking exhibits were those of apples, sweet potatoes, corn and eggs. The prize for sweet potatoes was won by growers in Gloucester and Cumberland counties. The corn prize, a silver cup valued at $500, went to Henry S. Lippincott, of Marlton, whose specimens were of the Yellow Dent variety, and honorable mention was given to E. T. Gill, of Haddonfield. The exhibit of eggs was a special feature, because of the great advance made in New Jersey in the poultry industry in the past few years. Dearborn & Sharpe, of Blairstown, carried off the buff egg prize, with F. Warren Summer, of Elizabeth, a close second. Incidentally, Professor Lewis, who had charge of the egg department, showed that the average production of the hens of the United States is 60 eggs per year; that of New Jersey hens is 100, and his aim is to raise the average to 140.

The New Jersey county raising the most eggs in proportion to population is Hunterdon, with Cumberland next and Monmouth and Somerset following. The state poultry department is taking a census of poultry kept within the city limits, and finds, thus far, that there is one hen to every two people, even in cities having from 30,000 to 50,000 inhabitants. A pen of white Leghorns was used to show the proper method of keeping fowls. There are 98 plants in this state that keep from 1,000 to 10,000 heads or more, and over 300 plants that keep from 500 to 1,000.

The exhibit of apples was fine as to quality, but not great as to quantity. There were four prize competitors from New Jersey: Horace Roberts, of Moorestown; William H. Reid, Tennent; John W. Barclay, of Cranbury, and Granville Leeds, of Rancocas. Their varieties were Sutton Beauty, Stayman Winesap, Baldwin, Grimes' Golden, Rome Beauty, Wealthy Gravenstein, White Pippin, and a few others. One of these exhibitors has 15,000 trees in his orchards. Five boxes each of three varieties constituted an exhibit. Virginia, however, defeated New Jersey by two-thirds of one point in this contest for the silver cup, valued at $750, offered for the best exhibit of 15 standard boxes of apples of three varieties, raised and exhibited by growers in the Eastern States. The successful grower was C. W. Steck, of Winchester, Va., with Granville T. Leeds, of Rancocas, and John Barclay, of Cranbury, second, less than one point behind him.

Prof. H. E. Van Deman, formerly United States government pomologist, and probably the foremost expert on apples in this country, judged this contest. Quality and condition of the fruit was scored on the basis of 64 points, while packing counted 30 points, and the package itself 5 points. There were also exhibits of pears of large size. Sweet potatoes canned and sweet potatoes growing were among the novelties presented in the New Jersey exhibit.—D. T. Hendrickson, Monmouth Co., N. J.

INSTITUTES FOR THE WEEK

February 3-4, at Cross Roads, York Co., R. P. Kester, S. W. Funk, C. A. Row and E. K. Hibshman. At White Hall, Montour Co., J. T. Campbell, F. W. Card, M. H. McCallum and E. S. Fowler. At Pulaski, Lawrence Co., F. Menges, F. H. Fassett, C. M. Barnitz and L. O. Van Noy. At Leraysville, Bradford Co., L. W. Lighty, D. E. Murray, G. C. Given and E. S. Fowler. At Weatherly, Carbon Co., D. H. Watts, Mrs. Jeane Kane Foulke and E. L. Anthony. At Big Creek, Carbon Co., the same speakers will be present.

February 5-6, at Loganville, York Co., R. P. Kester, S. W. Funk, C. A. Row and E. K. Hibshman. At Mansdale, Montour Co., J. T. Campbell, F. W. Card, M. H. McCallum and E. S. Fowler. At Princeton, Lawrence Co., F. Menges, F. H. Fassett, C. M. Barnitz and L. O. Van Noy. At Wysox, Bradford Co., L. W. Lighty, D. E. Murray, G. C. Given and E. S. Fowler. At New Mahoning, Carbon Co., D. H. Watts, Mrs. J. K. Foulke and E. L. Anthony.

February 6-8, At Red Lion, York Co., R. P. Kester, S. W. Funk, C. A. Row and E. K. Hibshman. At Allenwood, Union Co., J. T. Campbell, F. W. Card and M. H. McCallum. At Plaingrove, Lawrence Co., F. Menges, F. H. Fassett, C. M. Barnitz and L. O. Van Noy. At Liberty, Tioga Co., L. W. Lighty, D. E. Murray, G. C. Given and E. S. Fowler. At New Tripoli, Tioga Co., L. W. Lighty, Mrs. J. K. Foulke and E. L. Anthony.

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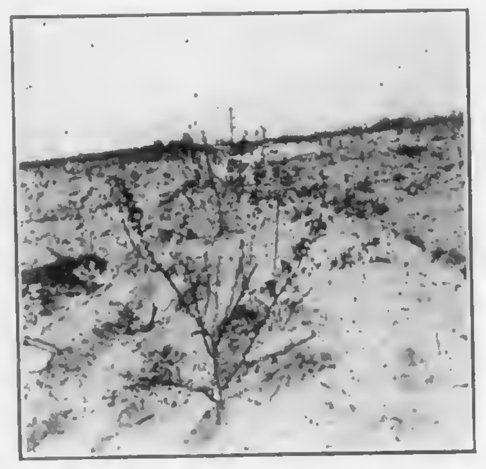
Horticulture

BASIC SLAG FOR PEACHES

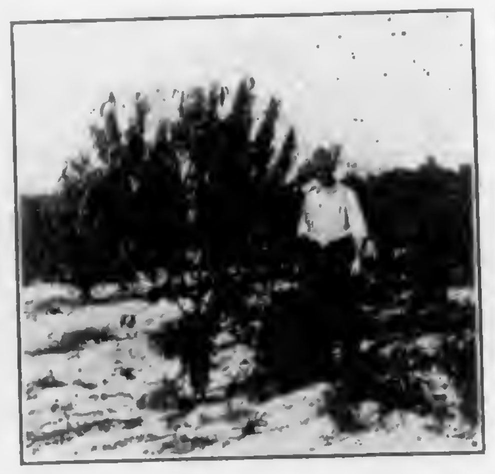
In peach growing, as in all other lines, there are many ways of doing the same thing, and our methods probably would not be suitable to all conditions.

We have about 87 acres of peaches in Camden County, this being the largest orchard in this neighborhood, and we grow chiefly Elberta and Carman. The trees are now three years old and were originally set out in a chestnut grove in unbroken land. This was a big undertaking, but we determined to see it thru to the finish. Now, however, the land is in a state of thoro cultivation, and last year we grew market garden crops between the rows.



PEACH TREE PHOTOGRAPHED APRIL 30, 1912.

In the spring, after the ground is plowed and harrowed, we apply 12 lbs. of basic slag to each tree. This is allowed to remain on the surface of the ground, where it will feed the tree as it is needed, and it is a revelation to see the results for this slag treatment. Last summer our trees made a growth of 45 inches, and the fruit is fine, especially as to color. Of course, we did not have a big crop, for our trees are too young, but our Carman trees bore 1½ baskets to the tree, Belle of Georgia 2 baskets, Greensboro 2½ baskets. The illustrations show a tree in the spring and the same tree on October 28. Next year we are going to continue the slag, only in greater amounts, as we know that it works well on this sandy soil.



SAME PEACH TREE PHOTOGRAPHED OCT. 28, 1912.

We are going to plow the orchard again, and look for a bumper crop next year, since all the trees, and especially the Champion, are full of buds.

The orchard was sprayed in March with lime and sulfur, testing .003 in density. Before the blossoms come, and about two weeks after blossoming, we spray with self-boiled lime and sulfur, to be repeated for the third time in about 10 days. We spray with a pressure of 225 lbs., and can not do a good job with less, since our high pressure enables us to cover every inch of surface on the tree. By this treatment we are getting results, both in color and size.—Frank Alburger, Camden Co., N. J.

Horticultural Queries.

(Conducted by Prof. H. A. Surface, State Economic Zoologist. Address all queries to Pennsylvania Farmer, Philadelphia, Pa.)

SETTING A YOUNG ORCHARD

I have ordered some peach, pear, plum and quince trees for spring planting. The ground on which I want to plant them is rather poor.

What commercial fertilizers shall I use for best results?

Is a combination of manure and fertilizers beneficial to newly-planted trees?

Is ground lime beneficial to newly-planted trees?

What quantities of manure or fertilizers should be used?

Is the use of dynamite to be commended in setting trees?

Will you please answer these questions, as I am badly in need of competent advice?—J. L. B., Cambria Co., Pa.

I recommend you to plow this soil deep, when it is in good condition for plowing. Scatter broadcast over it from one to two sacks to the acre of a fair-grade of commercial fertilizer, about such as you would call a good potato fertilizer. Also scatter over it about a wagon load of lime to the acre, Then harrow it well. Plant your trees, and put a little manure and commercial fertilizer on top of the soil around each tree and keep it cultivated. Avoid putting any commercial or manure in contact with the roots of trees or in the holes where they are to be planted.

Ground lime is no more beneficial than any other form of lime, and is more expensive. You can use almost any quantity of manure per acre that you wish to apply, but I can assure you that no fertilization of the soil will take the place of cultivation. The chief thing is abundant cultivation, such as should be given a good crop of corn or potatoes. It is scarcely necessary to add much manure to the soil for young trees in the first year they are planted. I would rather use it over the ground as a manurial crop for some cultivated or hoed crop, like corn or potatoes or beans, to be grown between the trees.

The use of dynamite in setting trees may be commendable in certain cases, as, for example, when there is hard pan so near the surface of the earth that it is an unfit place for orchard growing, but it must be remembered that dynamite will not permanently correct these fundamental evils. I really would not be willing to risk my reputation by trying to start an orchard on ground that is of such a nature as to need dynamiting. On the other hand, I do not think it is necessary to dynamite soil that is really good orchard soil. At best, this is only in its experimental stage, and the best thing you can do is to remain on the safe side by trying a little of it, if any, and noting the result.

TOMATO GROWERS' CONVENTION

A meeting of the New Jersey tomato growers, growing tomatoes for the Campbell Soup Company, of Camden, N. J., was held at the Campbell factory, January 18. About 250 growers were present. In the morning an inspection trip was made thru this model soup factory, taking in every step in the manufacture of soups from the raw material to the finished product. Every grower was impressed with the extreme neatness and cleanliness of the factory, as well as the great effort which is being made to produce the finest possible finished product.

A very attractive luncheon was served, after which talks were given by Mr. H. F. Hall, the company's superintendent of farms; Prof. W. W. Tracy and Prof. W. A. Orton, both of the Department at Washington. Professor Tracy called attention to the fact that the tomato originally was a semi-tropical plant, and hence it is necessary to imitate those conditions as closely as possible. The one great point in tomato culture is maintaining an even and continued growth during the entire life of the plant. Any check, especially when the plants are in the flats, or just after they have been transplanted, will greatly reduce the yield. This can be largely avoided by setting out the plants when there is a great amount of sunlight and danger from frost is over. Blossoms will not set in either cold, wet weather, or in very dry weather. Tomatoes will give a large yield on a clay loam soil, but sandy conditions generally encourage earliness. Professor Tracy has gotten excellent results from turning under a heavy clover sod late in the fall. Early in the spring, cultivation is given until the ground is in an ideal condition. It is very important to watch for diseased plants, and to reduce this danger, spraying should begin in the frames. Cultivation begins immediately after the plants are set out and is given very frequently. It is very important that the soil be well aerated.

Professor Orton spoke of some of the more common diseases of the tomato and the necessity of intelligent spraying. Damping off is a very common disease in the flats, and may be largely overcome by careful regulation of both ventilation and watering.

Corn-Club Contests.—Circular No. 104, of the Bureau of Plant Industry, gives outlines and suggestions on special contests for corn-club work. The discussion covers subjects of club contests; premiums suitable for awards; where to hold contests; seed corn selection; kinds of contest, including bushel, two-ear or single-ear, hill or single-stalk contest; seed corn stringing; plowing contests; corn judging; germination contests; farm management contests. The circular is free upon request to the above Bureau, United States Department of Agriculture, Washington, D. C.

Sweet Clover.—An interesting and instructive booklet of 16 pages on "Sweet Clover and How to Grow It" is being sent out by the Bokhara Seed Co., Box 8, Falmouth, Ky. The booklet discusses nature and uses of sweet clover, methods of growing and harvesting, value, etc. It is free to interested readers who write to the above address for it.

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TIGHT BINDING

The Dairy

PENNSYLVANIA DAIRY UNION MEETING

The 12th annual meeting of the Pennsylvania Dairy Union was held in Harrisburg, January 21 to 23. President F. A. Wills, of Philadelphia, occupied the chair, and secretary Prof. H. E Van Norman, of State College, filled this office as one of his last public acts before going to California, Feb. 1st, to take up his new work in the agricultural college of that state. Six sessions of the Union were held, divided equally between the milk dealers, milk producers and the buttermakers. At each session men who are acknowledged authorities in their class of work were present and gave instructive lectures. All of the meetings were well attended, and many valuable points were brought out in the discussions.

Butter Making.—The buttermakers had a serious subject to consider in the discussion of how to continue in business, fulfilling all the new requirements, and still meet the competition of the cities for whole milk. The day of the skimming station and farm separating in their opinion is soon to end. The creameries must handle the whole milk in such a way as to receive the greatest benefits of the by-products. Prof. C. W. Larson, who has charge of the creamery at State College, which does a business of $70,000 annually, showed by figures that it is possible to always obtain an over-run of 20 percent. Some markets, especially Philadelphia, want a very dry butter, but if it is made with less than 10 percent moisture, the maker is not getting all the profits possible out of the business. The loss of butter fat in the skim milk and the buttermilk, while seemingly small, amounts to a large sum in a year, and should be carefully watched by testing frequently.

When asked as to which was the best temperature for churning, Professor Larson said that he could not give a definite answer, as so many conditions had to be considered. If the churn is one-third full, as it should be for best results in churning, and the butter does not come in from 30 to 40 minutes, the cream is too cool. On the other hand, if the butter comes within a shorter time, the cream is too warm; so each butter maker can regulate the temperature to suit his own condition. If milk is separated at a temperature of less than 90 degrees, there is a loss of fat which could have been prevented.

The Buttermaker's Part.—Mr. Harry Ott, of Wismer, who last year won first prize for creamery butter and second prize this year, gave some of his experience in making good butter. Clean milk and cleanliness in everything connected with it is the first essential for good butter. He prefers using a 35 percent cream which has been aerated and cooled when it came from the separator. Under his conditions, Mr. Ott churns in summer at a temperature of 50 to 52 degrees, and in winter at 56 degrees. When the butter appears in the form of granules, he draws off the buttermilk and works it. The butter is washed twice by adding as much water, and at the same temperature each time as the buttermilk which he took away. The management of Mr. Ott's creamery thinks that pure cultures are too expensive, so he uses buttermilk as a starter.

The Butter Contest

The fourteen samples of butter at the dairy show in connection with these meetings were judged by Mr. C. W. Fryhofer, of the United States Department of Agriculture. The high quality of this butter was especially commented upon, none of them scoring less than 90 points. This fact is worth considering, because as milk shipping increases it will only be the good buttermakers who will be sure of their places in the butter-making districts. The entries and scores in this contest were as follows:

Creamery Butter—	Score.
Frank Erway, Harrisburg	94
Harry Ott, Wismer	93¾
Hershey Creamery Co, Guernsey	93¼
Otis Blish, Holtwood	93
H. L. Young, State College	92½
Wm. Whiteside, Pottstown	92
O. D. Mott, Edinburg	91
M. Darlington Sons, Pomeroy	90
Dairy Butter—	
A. Leonard & Son, Troy	95
Mrs. A. Leonard, Troy	93½
John L. Cole, Zion	92½
Robert L. Park, Canonsburg	92½
Joe Donahue, Bedford	92
Mrs. H. W. Hunter, Burgettstown	90¾

Creamery and Patron.—What the creamery man can do for his patrons met with general discussion. The idea prevailed that the object should be to lighten the work rather than increase it. Mr. H. M. Stokes, of Hanover, believes that taking the patron into the confidence of the creamery and showing him more than trying to keep all knowledge of the business away from him, is a great benefit. Washing the cans before a patron takes them back home has resulted not only in better milk but less work for the patron at a small expense to the creamery by the use of modern and inexpensive can washing apparatus. The question as to whether the creamery should own and supply the cans for the patrons caused arguments on both sides. Some men present had found it profitable to do this, while others claimed it was needless expense and a wrong practice. Grading milk and cream and paying for it so as to put a premium on that which was properly handled and cared for was considered a move in the right direction.

Development and Feeding of a Herd.—Ten years ago Mr. C. B. Johnson, of Warren, had a herd of 85 cows whose average production was 3,908 pounds. Today, with a herd of 98, his average production is 8,155 pounds for each cow. In his opinion, three things are responsible for this increase: Raising the calves from the best cows, continually weeding out the poor ones and feeding a balanced ration. For the balanced ration, Mr. Johnson gives all the credit to the annual Farmers' Week, at Pennsylvania State College. Seven years ago he attended the first meeting knowing nothing about this subject. He has attended every year since then, and is now a master of the feeding question. He employs Danish labor, having five men who do nothing but the milking and barn work.

Discussion of the question, "How to Raise Calves" showed that there is no one best way to do it. Some members had good results with the different calf foods on the market, while others used various home mixtures. In every case it was conceded that perfect dryness of quarters and absolute cleanliness of feeding vessels were essential to success.

Commercial Feeds.—"What Bought Feeds Are Made of" was presented by G. C. Hutchinson, of Warriors' Mark. He advised those interested in the matter to secure Bulletin 223 from the Department of Agriculture, at Harrisburg, which treats fully on this subject. As a general rule, the higher the protein the higher the fat, and the lower the fiber the better is the feed, and by comparison of the analysis, now required on all mixed feeds, their value can be roughly determined.

Cost of Cleanliness.—The feature of the milk producers' session was the illustrated lecture by Dr. Chas. E North, of New York City, showing what has been done in making certified milk at a central plant. Dr. North has established a business which now has 70 patrons, making an average of more than 200 quarts a day. A suitable building has been erected, and the milk handled in such a way that it is shipped to New York City as certified milk. The idea upon which this system is based is that if the expensive part of making certified milk, such as complete sterilizing equipment, superintendence, bacteria testing, bottling, icing and packing for shipment can be concentrated, the cost per quart is reduced.

This central plant furnishes both the milking pails and the 40-quart cans in which the milk is brought from the farm. These are sterilized and dried before taken to the farm, and two sets of covered milking pails are always sent, one for night's milk and another for morning. The only equipment on the farm is a cooling tank. Ice must be used for the night's milk, but the morning milk is taken direct to the central station before cooling.

There are no rules and regulations for the barns and cows. A premium is paid according to the bacteria count, and the farmers have learned that clean barns, clean cows and clean milkers have a direct bearing on the size of their monthly check. The milk from tuberculin-tested cows commands an extra three-eighths of a cent a quart. A premium is also paid for the butterfat over the regular New York milk quotations, so that the price received depends on the man producing it.

Losses in Production.—Mr. L. C. Tomkins, of State College, who travels among the farmers of the state as a dairy field agent pointed out what, from his observation, were some of the causes of loss to the milk producer. Failure to raise cows and loss in selling veal calves, which drink more milk than their veal value, are common reasons why a dairy does not pay. The feed question, especially now when feed is so high, does not allow poor care in selection; inability to know a low from a high-grade article, lack of knowledge of the composition and no use of a balanced ration all show on the wrong side of the ledger. Lack of system in not having the same milkers for each cow, not knowing when each cow will come fresh, failure to weigh the milk and feed of each cow also make easy pitfalls. Use of poor bulls and trying to make milk from a beef cow because of her value to the butcher when she is dry, are other evidences to the field agent why dairying does not pay.

Feeds to Buy.—The question of balanced rations was fully discussed by Prof. Van Norman. He distributed and advised anyone interested in this subject to obtain Circulars Nos. 9 and 33 from State College, which treat on this question. The ideal mixture should be cheap, palatable, bulky and healthful, and can be determined only after knowing what kind of feeds the farmer has on hand and the prices of bought feeds in his locality.

In compounding a ration, corn meal or corn and cob meal are generally used as the base, as they are the cheapest forms of energy. The two cheapest sources of protein are used and a bulky feed added to them. It has been found that the mixture of four kinds of grain gives the best result, but if no silage is used, oil meal is added to advantage. The mixture should be fed at the rate of one pound of grain for every three pounds of milk which the cow gives. Professor Van Norman thinks that there are hundreds of cows which are being fed so as to produce only 20 pounds of milk, altho they have the ability to produce almost twice as much if properly fed. Study each cow, and see whether by giving less to the fat, round-boned, smooth cow and a little more to the deep-bodied, thin, angular, heavy-milking cow, more milk can be produced and at a less cost. Sometimes an additional $1.00 worth of feed will produce $1.50 worth of additional milk. No one but the feeder can determine these things.

The Milk Contest

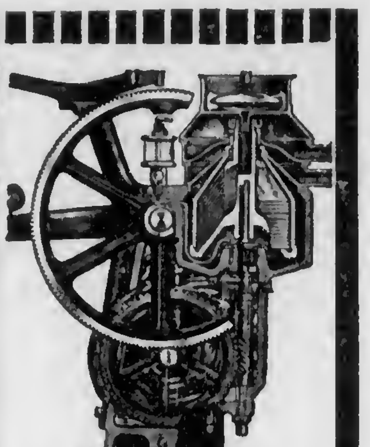
Thirty-five quart samples of milk had been sent to Harrisburg for the milk contest. Mr. Ernest Kelly, of the Department of Agriculture, Dairy Division, at Washington, did the scoring. Thirteen samples of this milk had a bacteria count of less than 1,000, which is considered remarkable. It is a noticeable fact also that the three winning samples of market milk scored higher than the three samples of certified milk. The winners in each class and their scores were as follows:

Certified Milk—	Score.
Belvidere Farm, Landenberg	94.35
B. B. Hileman, Altoona	94.30
H. F. Hudson, Ravena, Ohio	92.7
Market Milk—	Score
Mrs. A. Crawford & Son, Garfield, Ohio	97.9
J. R. Comfort, West Chester	96
This. Atchinson, Farmdale, O.	96

E. E. Rick Company, of Pittsburgh, had 24 of their milk shippers enter this contest, thus winning the trophy for the company having the largest number of patrons entered.

Officers of the Dairy Union for the coming year were elected as follows: President, E. M. Bailey, of Pittsburgh; vice-pres., W. R. Gorman, of Munsey; Sec., Prof. C. W. Larson, of State College; treas., W. E. Perham, of Pleasant Mount.

In an effort to secure better agricultural recognition in the State General Assembly, a federated association of all the agricultural associations has been formed, and the Dairy Union has three members. F. A. Wills, E. E. Rick and Prof. C. W. Larson were appointed for this work, and Mr. Wills was designated to be the dairy representative on the executive committee of the new federation.



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In other, so-called, automatic oiling systems some of the parts have to be oiled by hand and no provision is made for getting rid of dirt that may get into the oil from the outside or of small particles of metal which come from wear, so that after a short time the oil supply becomes foul and injurious to the finely adjusted wearing parts.

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The new 72-page De Laval Dairy Hand Book, in which important dairy questions are ably discussed by the best authorities, is a book that every cow owner should have. Mailed free upon request if you mention this paper. New 1913 De Laval catalog also mailed upon request. Write to nearest office.

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NEW YORK CHICAGO SAN FRANCISCO SEATTLE

International Special Molasses Feed
AN OPEN LETTER TO DAIRYMEN.

What is the cheapest feed you can buy this season? That is the question that is interesting every dairyman right now.

Corn promises to be cheap and oats are selling at very low prices. Ground corn and oats will make you a cheap feed as far as cost per ton is concerned.

If you could buy a feed for mixing with ground corn and oats that would cost you about the same as corn and oats and that would increase your milk production at least $30 per month on each twenty head of cows, you would increase your profits $360.00 a year if milking twenty cows per month. If milking forty cows you would increase your profits $720.00 per year.

Hundreds of dairymen are using International Special Molasses Feed mixed in equal parts by weight with corn and oats and are reporting to us that their cows have increased from one to three quarts per day in their milk production. International Special Molasses Feed is far superior to ordinary mill feeds as a milk producer and conditioner.

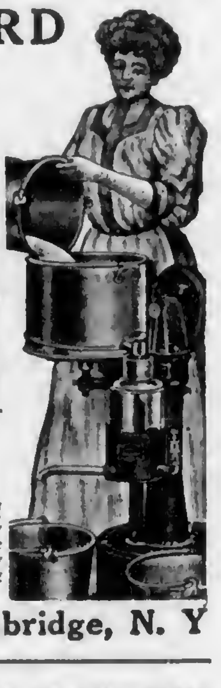
Just figure out what an increase of 1½ quarts per day on each cow means for YOU. It means 240 gallons more per month from a herd of twenty cows. It means twelve gallons more per month from each cow. In order to get this result all you need to do is feed one-half International Special Molasses Feed and one-half corn and oats in the place of straight corn and oats. The increased milk production thus obtained makes the International Special Molasses Feed worth at least $25.00 more per ton than ground corn and oats.

Latest State bulletins give the following reports on their analysis of International Special Molasses Feed: State of Pennsylvania, protein 14.69; fat 5.74. State of New Jersey, protein, 15.82; fat 5.02. State of New York, protein 15.19; fat 5.58. This compares with an average analysis of less than 10% protein for ground corn and oats.

For each ton of International Special Molasses Feed that you will buy and use along with ground corn and oats you will make an extra profit of $20.00 over and above all extra cost.

Ask your dealer for International Special Molasses Feed. If he don't keep it for sale, then send us your dealer's name and address—we will arrange with him to supply you.

INTERNATIONAL SUGAR FEED COMPANY
M. W. SAVAGE, Pres., MINNEAPOLIS, MINN. (8)



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Poultry

THE VALUE AND USE OF CUT GREEN BONE

Cut green bone as a poultry food can hardly be called a new food, as it is something like 20 years, I believe, since it began to be known. And yet wherein its value as a poultry feed —especially in winter—lies seems not to be understood by a number of our poultry-keeping general farmers. For the benefit of such, I will try to state clearly the wherefore of cut bone's value for poultry, and tell briefly how to feed it.

I assume that it is not necessary to state what is meant by a ''well-balanced ration,'' as this subject is one of the most discussed ones of present-day stock-keeping, and as applied to poultry has been explained in the poultry press and at institutes until its importance, as well as its meaning, should be pretty generally understood, even by beginners. Sufficient it to say here that one of the very important elements of a well-balanced ration for poultry is animal matter, and that this element is one which is very frequently omitted from the feed of farm-kept fowls in winter time, except on sporadic occasions, as just following a butchering. In summer time fowls on unlimited free range will obtain this necessary animal food in the bugs, worms and insects they pick up. But in late fall and during the winter this is impossible, and with the farm-kept, free-range birds, as with those flocks always confined to pens and runs, this element in their feed must be supplied. If the fowls do not get it, they will deteriorate in vitality, the egg production will dwindle, the percent of fertility in eggs from the breeding pen will be low, and the chicks that are hatched will mostly be weaklings. By observation I have found that many poultry-keeping farmers are confronted by this condition in their flocks every winter and spring. These people generally complain of their ''poor luck'' with poultry, finding fault with the breed, variety or strain, whereas the real fault is a lack of the animal element in their food.

A PRIZE WINNER.

Among the several forms of animal food suitable and acceptable to poultry, green cut bone is about the cheapest and most universally obtainable. Cut green bone contains, as nearly as does any purely animal matter and in about the correct proportions, the elements necessary to induce a heavy egg yield; a healthy, vigorous growth in young fowls and aids to a high percent of fertility in the eggs from breeding pens. But it should be fed sparingly at first, until the fowls—especially laying ones—become accustomed to its use. An ounce per fowl every other day being about the correct proportion for laying hens in winter in this latitude. When fed on this basis, it is best to cut the bone freshly for every feeding. During the summer the allowance of green bone may be reduced by giving this same amount but once a week. During the moulting period, however, it should be fed in its winter time proportion. With growing birds over three months old—especially birds of those large-framed breeds—as high as an ounce per bird per day, irrespective of season, may be fed in safety and with good results.

After one commences feeding it, it should be fed with a certain degree of regularity to give best results, until its feeding is stopped entirely. Some poultrymen advocate giving this cut green bone pure, letting it take the place of one of the regular feeds on that day, but all my experience is against this method. Instead, I prefer to make it a part of the mash, reducing the total amount of the other ingredients by just that much. This way of feeding not only insures a more even distribution of the bone amongst the flock by preventing, to an extent at least, the very greedy ones getting twice their share, but involves less puttering labor, too. It gives me most satisfactory results fed in this way, in either wet or dry mash. A good bone cutting machine is not just ''another expense,'' as so many farmer-poultrymen view it, but it is a dividend returning investment—just as is a cream separator or a silo to dairymen. In buying a bone cutter, get one large enough to do the work easily—better larger than necessary than too small.

A general farmer of my acquaintance, who has always kept considerable poultry, stoutly maintained for years that ''he could not afford to buy such specialty machines,'' but a couple of years ago his son won a green bone cutter in a Thanksgiving guessing contest conducted by a local ''Farmers' Supplies'' dealer. So now having it, they put it to use, and that same farmer swears by the machine today as one of the most useful implements on his farm.

''I thought,'' he said last winter at a farmers' institute, ''that just a 50-acre general farmer like myself couldn't afford to buy such special machines as a bone cutter, but since we've had it I learned that the real truth is, we couldn't afford not to have it. Ours didn't happen to cost us anything; but even if it had, it would already have paid for itself a couple times over, in the increased returns from our poultry because of it.''

The bones should be fresh, and before being cut should be cleared of all putrid meat. Do not make the mistake of considering it a complete feed. It is not—not even for egg production, notwithstanding the fact that it contains all the elements of the egg in nearly like proportion. It does not take the place of sound grain, bran, green-food nor any of the various other food, not animal foods, that might be enumerated. Above all, it does not take the place of grit, as some people of my acquaintance who took to using it profess to have understood that it did, before they found out otherwise from experience. But it is an easily assimilated animal food that can be supplied at a low cost, and the material for which is universally obtainable; and everywhere it can be employed by poultry raisers as the means of supplying the important animal elements in the fowls' rations.—Clark Westford, Schenectady Co., N. Y.

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POULTRY

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Management of the Farm Flock

By Prof. W. H. TOMHAVE, State College, Pa.

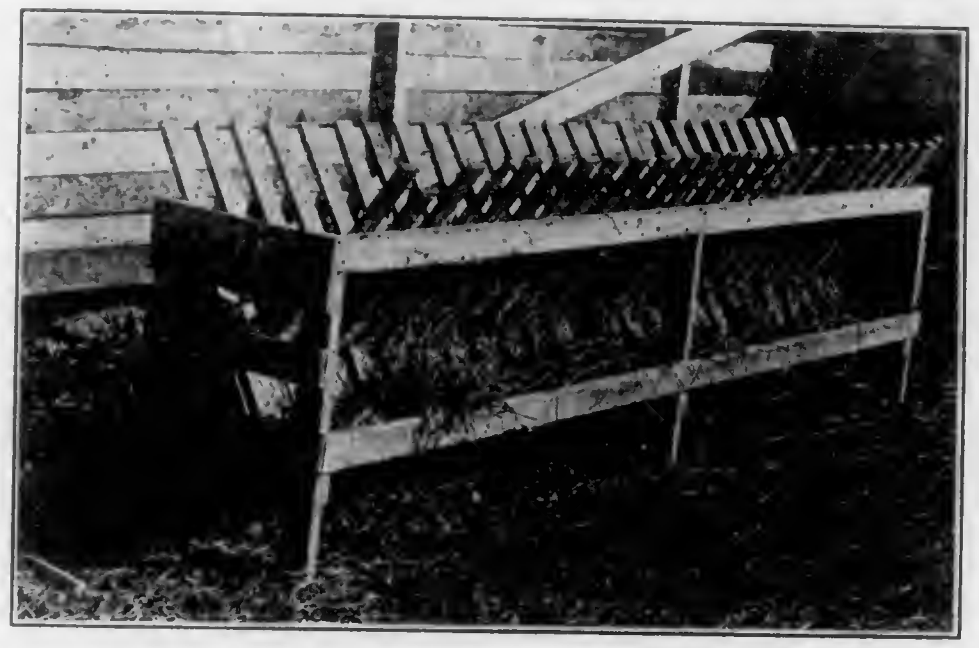
Proper management of all farm animals is highly essential or important for best results in breeding. This is as true of a flock of sheep as any class of live stock. While sheep will give some returns for little or no attention, they will give much larger returns when properly managed. After the selections of the foundation stock, the first aim of the sheep breeder or beginner in the sheep business is to see that all the ewes are bred. The proper time for breeding is during the month of October. This will bring the lambing time about the first of March, which is the proper time to have lambs come in order to get them ready for the fall market. One of the aims should be to get all the ewes bred at as near the same time as possible. This will shorten the lambing season and make the lambs very nearly the same size when ready for market.

It is a good plan to ''flush'' the ewes the latter part of September or fore part of October. By ''flushing'' we mean to get them in condition for breeding, and this can be done by feeding a grain mixture of corn, oats and bran, or letting them feed on green rape.

The ram should also be kept in good condition during the breeding season. He should not be permitted to run with the ewes during the day, but turned in with the flock for a short time each morning and evening. All ewes should have a tag in the ear with a number, so that a record of the date of breeding can be kept. If the attendant can not remain with the flock and check out the ewes as they are bred, some marking system should be adopted. It is a good plan to smear the breast of the ram, well back between the forelegs, with a mixture of oil and lampblack. By this means the ewes may be identified and recorded.

The size and quality of the lamb crop will depend in a large measure upon the way the ewes are fed. No ewes can produce good, strong vigorous lambs unless they receive the proper kind of food with which to develop and nourish their young. We should not overlook the fact that the ewe must furnish the nourishment necessary to develop the lamb up to the time of birth. The ewes should receive a small amount of grain during the winter and some good, clean hay or silage. If corn silage or roots are fed, be careful that they are not frozen or mouldy. When alfalfa hay can be had, very little grain is necessary. Overfeeding must be guarded against, as that makes the ewes too fat, and they will not be in such good condition at lambing time.

The breeding ewes, like all other sheep and live stock, should be provided with adequate shelter. Sheep do not need a warm place, but they must have a shed that is free from cold rains and snow. If the fleece is allowed to get soaked from rain or snow, it takes a long time to get it thoroly dried, and often results in thoroly chilling the body, which produces bad colds and often ends in catarrh. The lot in which the ewes are kept must always be kept dry, as there is danger from foot rot. If the pens are not well bedded the wool gets filled with dirt and manure, and not only detracts from the appearance of the flock but lowers the grade of the fleece.



END VIEW OF GRAIN AND ROUGHAGE RACK FOR SHEEP AND LAMBS.

Feed Racks and Troughs.—Suitable feeding vessels must be provided to make economical use of the feed consumed. Hay or feed thrown on the ground is half wasted, as sheep do not relish feed which they must pick up from the manure. Feed racks along the wall, made of strips two inches wide and about eight inches apart, are convenient for feeding hay. Small troughs made of six-inch boards are desirable for feeding grain.

Exercise.—Sheep should always have plenty of exercise to keep the body in good physical condition. Where the ewes are kept closely confined, the lambs will not be so strong at birth as where they have a yard in which to exercise. To get the ewes to take exercise daily, it is a good plan to feed them a little hay out in an open yard. Some breeders feel that when the pregnant ewes are forced to take considerable exercise there is less danger of lambs coming wrong end first. It will also be much easier for the ewes to deliver their lambs.

Plenty of good clean water and access to salt should be provided. Impure and dirty water must always be avoided. Unless clean water is had the ewes will not consume as much feed as they should. Salt seems to increase the appetite of sheep and aids in the digestion of the food consumed. The salt should be kept before them all of the time, or they will eat too much if fed only occasionally, and cause an injury to their system.

Cheviot Sheep Meeting.—The 12th annual meeting of the American Cheviot Sheep Society was held at Fayetteville, N. Y., December 30. Officers were elected as follows: President, George W. Parnell, Indiana; vice-president, Edson McLaughlin, New York; secretary-treasurer, F. E. Dawley, Fayetteville, N. Y.

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Established 1880. Published Every Saturday.
Entered as second-class matter at the postoffice at Philadelphia, Penna.

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Philadelphia, Pa., February 1, 1913.

PENNSYLVANIA AGRICULTURAL MEETINGS

The joint meeting of the Pennsylvania State Board of Agriculture, State Breeders' Association, State Horticultural Association and State Dairy Union, held at Harrisburg, January 21 to 23, was largely attended and a success from every point of view. The combined programs covered a wide range of subjects, and the discussions which followed showed the increasing interest in these public meetings. A difficulty experienced by many was that there were so many good things going on at the same time that it was hard to decide which ones to miss. The horticultural and corn shows held in connection with the meetings gave a common meeting ground for all. The exhibit hall was crowded at all times, testifying to the popularity and value of these shows.

State Board of Agriculture.—The State Board of Agriculture held six sessions, with a full attendance at each session. The programs were made up mainly of reports of standing committees and specialists of the Board. These reports cover the whole field of farm activity. The specialists are men chosen for investigation and study on special lines of agricultural work. Their reports are among the most authentic and valuable contributions to the fund of practical as well as scientific agricultural knowledge of the year. Each specialist and committee chairman presented carefully prepared reports, which will be published in full in the annual report of the Board. The work covers all crops common to the state, as well as special investigation of roads and road laws, fertilizers, wool and textile fibers, forests and products and feeding stuffs.

In addition to these reports there were special addresses, including a discussion of the plans for introduction of agricultural education into the public schools by Dr. W. C. Schaeffer, Superintendent of Public Instruction. These plans are encouraging to all friends of agriculture. They contemplate a steady growth, but with sufficient time to prepare both teachers and schools for good results. Dr. Samuel G. Dickson, Commissioner of Health, discussed the relation of public health problems to agriculture. The growing and preparing of food products naturally throws responsibility for health maintenance upon farmers. The commissioner dwelt at length upon this duty in dairy work, and ways and means of increasing efficiency of dairy inspection and with more fairness to all interested parties was freely discussed by various members of the Board.

Dr. Edwin E. Sparks, President of the Pennsylvania State College, addressed the Board on the general subject of the work, needs and future of the State College. The institution is in a most healthy condition for continuing its work after the recent drain on its faculty, and it is taking good care of the present enrollment of students, with every prospect of continuation of growth in membership and usefulness. The appropriation asked for from the present legislature will care for immediate needs and place the institution in position for steady growth. Prof. R. L. Watts, the newly elected Dean of the Agricultural College and Director of the State Experiment Station, addressed the Board, discussing some new things in agriculture which must be considered in the great problem of feeding the people, both in city and country. Among these he showed the necessity of meeting the competition of other states which are annually sending farm products into this state. He discussed the need of lime to overcome what is known as malnutrition in the soil; toxins in the soil; need of better knowledge in application of fertilizers; adding humus to the soil thru use of cover crops and green manure crops; irrigation, with special reference to overhead irrigation; improvement of seed and varieties and strains of seeds to meet new conditions and demands; marketing, thru parcel post and in preparation for postal express; better transportation facilities. All of these were touched upon as matters which farmers must study to meet the increasing demands on the soil.

Resolutions.—The Board adopted a number of resolutions touching needed legislation relating to agriculture, including endorsement of demand for $500,000 for a state fair, endorsement of budget for support of the State College, more effective dairy herd inspection, and exemption of live stock from taxation.

State Breeders' Meeting

The meetings of the State Live Stock Breeders' Association were a disappointment in several respects. The attendance was not what it should have been at any session, and the two speakers who were expected to give the most valuable talks of the meeting were not able to be present. The association had arranged to have Dick Stone, the famous sheep breeder and feeder of Illinois, and Hon. N. H. Gentry, the equally well-known swine authority of Missouri, to address its meetings. Both of these men disappointed thru inability to be present, and several sessions were adjourned without programs because of the absence of these men. Prof. W. H. Darst, of State College, gave a corn talk, outlining methods of increasing production. Particular attention was directed toward better seed. Dr. C. J. Marshall, Pennsylvania State Veterinarian, discussed needed legislation in relation to live stock matters. He discussed the recommendations recently put forth by the new cattlemen's association of this state, and showed that it was not new legislation that was needed so much as better means of enforcing present laws. Prof. Alva Agee, of the New Jersey Agricultural College, discussed alfalfa growing, with special reference to fertilization and preparation of soil to insure a good stand of plants and aid natural development of root nodules.

Meat Demonstration.—The best feature of the Breeders' meeting was the demonstration in meat cutting given by Prof. W. H. Tomhave, of State College. Work was done with two beef carcasses and a hog carcass. Presenting the matter chiefly from the standpoint of cattlemen, the Professor selected the carcass of one good, well-bred and well-fattened steer, and one poorly-fattened scrub steer. Figures were presented showing the increased profit to the feeder in feeding the better steer. This comparison was then carried out in the cutting, showing why the butcher can afford to pay a better price per pound for well-bred cattle because of the higher percentage of high-priced cuts to the total weight, and the better quality of all cuts. He also showed that by judicious cutting the butcher is also able to secure good cuts from the good carcass that are valueless on the poor carcass, and that the ordinarily cheap cuts from the good steer make a better appearance and have a higher nutritive value than supposed higher-priced cuts from the poorer carcass. There was much in the demonstration that would have been of value to the city consumers, in giving suggestions in selection of meats, utilization of cheap cuts, etc. But the purpose of the demonstration was to instruct in feeding and selection of feeders, and many points on this work were presented.

In the work on the hog carcass, the purpose was mainly to show how such carcasses should be cut to put the meat in best condition for curing and avoid waste. Some old traditional practices in cutting were shown to be wasteful, and many old farmers present admitted errors in past practice which have curtailed their profits from their home butchering. The Professor further demonstrated that the present-day college instructor is well qualified to give practical instruction. He handled the various knives and saws with a skill and precision that brought frequent applause from his audience.

The Corn Show

The corn show was one of the best ever held in the state. There were 130 entries, representing all sections of the state and showing rare quality and selection. Awards were made as follows:

Class A, Yellow Dent—1st, Burton Bayard, Waynesboro, $10; 2d, same exhibitor, $7.50; 3d, Pucy Cloud, Kennett Square; 4th, J. B. Henderson, Hickory; 5th, W. F. Wagner, Harrison City.

Class B, White Cap, Yellow Dent—1st, D. M. Landis, Lancaster, $10; 2d, George W. and Charles A. Row, Yardley, $7.50; 3d, D. C. Windle, West Chester; 4th, Newton Mendenhall, Chadd's Ford; 5th, D. C. Windle.

Class C, White Dent—1st, William B. Cloud, Kennett Square, $10; 2d, James H. Graeff, Tulehocken, $7.50; 3d, Clarence H. Smith, Wycombe; 4th, Thomas H. Wittkorn, Media; 5th, G. A. Trimmer, Mechanicsburg.

Class D, Ninety-Day Type—1st, Pucy Cloud, $10; 2d, Post Brothers, West Alexander, $7.50; 3d, William B. Cloud; 4th, Paul R. Trimmer, Lisburn; 5th, Post Brothers.

Class E. Southern Type—1st, Clarence Mellinger, Ronk, $10; 2d, William B. Cloud, $7.50; 3d, Horace Sinclair, Chadd's Ford; 4th, James MacDougal; 5th, Milton O. Brackbill, Lancaster.

Class F, Flint—1st, James W. Moore, Bethlehem, $10; 2d, Edwin Cheney, Westtown, $7.50; 3d, and 4th, W. F. Ballerchamp, New Berlin, 5th, C. B. Johnson, North Warren.

Class G, Club Exhibit—1st, Pomona Grange, Delaware and Chester counties, $25; 2d, Logansville and Springfield Farmers' Club, $15.

Class H, Half-Bushel Exhibit—1st, Pucy Cloud, $20; 2d, Burton Bayard: 3d, Clarance Mellinger; 4th, William Gilbert, Woodruff; 5th, Pucy Cloud.

Class I, Largest Ear—Milton O. Brackbill, $5.

Class J, Longest Ear—No. 129, name unknown, $5.

Grand Championship Ten Ears—Burton Bayard, gold medal.

Grand Championship Single Ear—Pucy Cloud, silver medal.

The prize winning corn was shipped at once to Columbia, S. C., to compete in the National Corn Show.

The Live Stock Breeders' Association re-elected its old officers, as follows: President, Hon. W. C. Norton, Waymart; secretary, E. S. Bayard, Pittsburgh; treasurer, J. F. Lantz, West Chester. Resolutions were adopted endorsing the $500,000 appropriation for a state fair.

Evening Meetings

Joint meetings of all associations were held at the evening sessions. On Tuesday evening the meeting was given to illustrated addresses by Dean R. L. Watts, of State College, and Dr. Chas. E. North, of New York. Dean Watts spoke on agricultural progress in Pennsylvania, pointing out improvements that have come and others that should be developed. He gave the country school as one of the first rural institutions in need of development. He said that the little country school where he got his early education is no better today than it was 40 years ago. It is doing fairly good work, but is not making progress. Country schools should develop with other lines of rural life. Among other new lines of development which farmers must interest themselves in are improvement of transportation facilities, which include parcel post, postal expess, motor trucks, etc.; organization of clubs for study of growing corn, grains, fruits, etc.; the state fair; county expert movement; co-operation; country church activity, etc. These questions ought to be taken up by farmers and worked out from the farmers' standpoint. No community can rise above the ideals held by the people of the community, and no lasting benefits can come to a community unless the people interest themselves and work out such problems for themselves. Most farmers know ways of improvement, but do not follow them. Knowledge is power only when it is applied, and in the application of what knowledge we already have farming should be raised, not to yield rich profits, but to give good, comfortable and happy homes and good living. This talk was followed by lantern slides showing the various lines of work carried on at the Pennsylvania State College and Experiment Station in the lines mentioned.

Agricultural High Schools.—Dr. C. E. North discussed agricultural high schools as a means of increasing the producers' efficiency, illustrating his talk with lantern views of the Sparks School in Maryland. The story of this school and what it has done is most interesting. Being located in a purely agricultural section, it has become the community center for educational and social work. It was formed by throwing four school districts into one, and the building and all its equipment has been developed at no additional cost. Agricultural and manual training are taught, and the parents have become interested with farmers' clubs and ladies' cooking and sewing classes on Saturday afternoons and evenings. A knowledge of accounting is one of the prime requirements in this school, and each graduate is required in his graduating essay to give an exact and complete statement of the profits and losses on his father's farm. Interest is thus being carried to the farms, and benefits are being shown.

State Fair.—The Wednesday evening meeting was given to consideration of the question of a state fair for Pennsylvania. Hon. W. E. Skinner, of Chicago was unable to be present, but Hon. A. P. Sandles, of Ohio, gave a stirring address on the benefits of a state fair to the agriculture of the state. He pointed out the value to the state of an annual exhibition of the best products of that state; how it advertised the possibilities of the state outside and brought in buyers and investors. He showed the value of competition and comparison of products and methods; the improvement resulting in quality of produce and increased interest in better methods. He emphasized the value of interesting the boys and girls, and directing their ambition toward better agricultural work. He described the work done by boys' corn clubs in Ohio, and brought many lessons from the recent Washington trip of the Ohio corn boys. The average corn yield per acre in Ohio is about 35 bushels. The average yield secured by some 625 boys was 85 bushels. The fact that these boys had proved that they were "50 bushels better than a man" had given them new ambition, new dignity and inspired them to be better farmers. Mr. Sandles gave some trite statements of the comparative expenditures on agriculture, education and militarism in this country, showing that the country spent only $1 for agriculture to every $40 for military equipment, or "$1 for food and $40 for fight," and spent only $1 for all forms of education to every $24 for militarism, or "$1 to shoot brains in and $24 to shoot brains out." He declared that the cost of firing one big gun in the United States navy would be sufficient to hire a school teacher for a long period of years, and "one good teacher can shoot farther and more efficiently than any gun in Uncle Sam's equipment."

The state fair project was farther discussed by Governor Tener, Matthew Rogers, Mr. E. S. Bayard and others. The Governor said that he was in hearty accord with the project, and would lend his influence to securing the passage of any reasonable appropriation bill which might be presented. The meeting was enthusiastic in favor of a request for $500,000 for the establishment of a state fair.

Production and Marketing.—The Thursday evening meeting was addressed by Mr. H. B. Fullerton, of Medford, Long Island, in an illustrated discussion of Farming, the Largest Profession and Biggest Business on Earth. Views of the wonderful development of agriculture on Long Island, and descriptions of the methods of production and marketing as worked out there were a treat to all present.

Horticultural Show

The sessions of the Horticultural Association meeting were largely attended. The program was carried out as scheduled, and every session was full. A complete report will be given next week. The exhibit of apples was an eyeopener to those who still try to maintain that the Northwest has a monopoly on apple growing. The banks of boxed apples and the 500 plates of beautiful specimens from all parts of

the state showed a uniformity of color, size and quality sufficient to convince anyone that Pennsylvania has the natural soil and climatic conditions, and requires only careful, intelligent care and management to produce the finest apples in the country. As usual, the south central counties showed strong in the exhibit, Adams County winning first in the county classes, with Perry County second. As usual, also, the Tyson Brothers, of Flora Dale, were the big individual winners, taking 11 firsts and 7 seconds in the show.

Tyson Brothers won first on plate Winesaps, York Stripe, Smokehouse, Grimes Golden, 5-box show Winesaps, do. York Imperial, box group of 4 varieties, largest display any variety, Winter Rambos, 5 plates Stayman Winesaps, York Imperial and Stripe. They won second on 5 boxes Grimes Golden, do Stayman Winesap, family orchard, York Imperial, Grimes Golden, Summer Rambo, and York Stripe. William Stewart, Landisbury, won 3 firsts and 7 seconds. Rice Bros., Elliottsburg, won 3 firsts and 2 seconds. Miss Katharine Large, Orrtanna, won 3 firsts and 1 second. A. D. Strode, West Chester, won 2 firsts and 4 seconds. Eli T. Garrison, Biglerville, won 2 firsts and 1 second. A. C. Richards & Son, Shellsburg, won 2 firsts. Other winners were D. M. Wertz, Waynesboro; George P. Myers, Biglerville; H. F. Hershey, Harrisburg; J. E. Risner, H. M. Keller, Gettysburg, and A. J. Moise, Titusville.

Educational Exhibit.—A strong educational and machinery exhibit was made. The Pennsylvania Experiment Station showed work in its various departments, the most popular, perhaps, being graphic demonstrations of results obtained from different treatment in the 30-year fertility tests. The results obtained in experimental orchards were also shown and brought out great interest. Other demonstrations showed work in dairying, poultry and live stock feeding, plant breeding, etc. Dr. H. A. Surface showed a particularly instructive exhibit from the demonstration orchards of the Department of Entomology. It included apples from every county in the state, with opportunity to study and compare effect of different methods of handling. There was also a large display of orchard and farm machinery.

The following officers of the Horticultural Association were re-elected for the ensuing year: President, Hon. W. T. Creasy; secretary, Chester J. Tyson, Flora Dale; treasurer, Edwin W. Thomas, King of Prussia.

Report of Dairy Union meeting appears on Dairy Page.

STATE CAPITAL NEWS

Outlook for Agricultural Legislation.—Thanks to the stimulus given by the big agricultural meetings last week, the outlook for legislation of real benefit to agriculture is better than for a generation past. Members of both housse are manifesting an interest in measures proposed for rural districts that is refreshing, and things which were regarded as experimental are now accepted. There is a disposition among legislators to consider that agricultural measures must be given consideration as a matter of course. From agricultural education to provision for farm doctors the program is extensive and looks flourishing.

Constitutional Changes.—Whether the state will get a new constitution to fit the times, or a general scheme of amendments as an answer to the demands for changes remains to be worked out. Some change seems certain. Some of the leaders of the bar, the railroad and other interests are calling for a convention to draft a new constitution, and at least one bill is before the house with that object. On the other hand, some high officials and representatives of many business interests and students of economics and affairs hold that the instrument of 1873 is fundamentally sound and only needs amendment in certain places to meet conditions. Unfortunately, many do not realize that a new constitution would not afford a panacea for all ills, and that if present provisions of the constitution should be enforced, or bills presented to provide for their effectual operation, some improvement could be had. The state has had three constitutions, dated 1790, 1838 and 1873. Some argue that by precedents the time has swung around for a new palladium of liberty, but whether this generation needs changes so badly that it should have a new constitution, at a cost of one or two million dollars, first and last, or amendments to stiffen up weak spots, at a cost of probably $600,000, is open to debate. At any rate, the signs are that the people will be allowed to determine the question. Whether they want a revamping or a new document, it is going to cost a heap of money.

Utilities Regulation.—The two chief bills for regulation of public utilities are now before the lower branch of the legislature, and two or three more are to come. The administration bill differs from the Republican state committee bill in that it regulates issues of stocks and bonds. Sentiment thruout the state is unquestionably for more effective regulation of the corporations under the present commission of three salaries at $8,000 per year each. The two new bills provide for five commissioners at $10,000 each. This is explained by advocates of such measures by the statement that as the proposed commissions are to deal with many more subjects than the present, the new body will be in practically continuous session.

Election and Reform Bills.—Election reform bills are to be introduced by the dozen, but whether the present session can pass a bill whose purpose can not be beaten remains to be seen. The last election bills made sweeping changes, but within a short time some of the safeguards were nullified, and the manner in which "information" was "disseminated" and party names taken was a scandal. What the people want is a restriction upon cost of election and protection to the integrity of the party column. Raiding of parties thru the nomination law in force for the last 12 years has been disgusting, and the people will look for a law to correct the abuses. It should make elections safe in city and hamlet, and afford vehicles to put crooks into jail. Other reforms proposed touch upon employment of women and children, and some are even proposed which would carry regulation into the kitchen and on the farm. Too much regulation is notoriously bad, and in the effort to remedy city conditions it is to be hoped the law makers will not hamper the whole state's economic system.

The Legal Side of Things.—Several measures have been introduced which, if enacted, would remove the grounds for criticism of legal proceedings. One bill would require all judges, before forwarding papers for payment of their quarterly salaries, to certify that they had decided all cases. There are courts in Pennsylvania in which it is said cases are two and three years old without having been passed upon, and such a law would expedite matters. Another bill would extend the right of appeal where illness or some other unavoidable cause prevented a litigant from taking advantage of the right within the required period, and another would protect a witness from being questioned about an offence 10 years after conviction thereof. Still another has for its object the establishment of municipal liens in boroughs.

Food Regulation.—Food bills already introduced have caused the usual biennial lining up of people interested in the manufacture of certain substances employed in preservation or treatment of products. Public sentiment seems to be swinging against the use of benzoate and other preservatives. The laws presented would prevent the use of any preservatives in foods, any coloring matter in oleomargarine, and require every package of edible sold in sealed parcels to specify its contents, weight and quantity. There will be a strong lobby here to break down the force of these bills.

Bounty Law.—Steps to provide an adequate appropriation to help get rid of foxes, wild cats, weasels and minks are taken in a bill just presented. It carries $100,000 to carry out the provisions. This sum is to last two years. In the last four years the law has been a dead letter because of no appropriation.

To Work Early.—The present legislature started work early. The organization in both houses was effected without much friction, and barring a false start in the house, things got off well. The committees have started to grind, and the first two bills to come before the house for action were to ratify the amendment to elect Senators of the United States by popular vote and to investigate company store abuses, two meritorious bills. The appropriation committees have started out to keep within the revenue, and it is devoutly hoped that they will not forget that stand a month or so hence.—Hamilton, Harrisburg, January 27.

COUNTY NOTES

Montour Co., Pa. (C.), Jan. 17.—Weather foggy, unpleasant and muddy. Hogs, 9c; beef, by side, dressed, 9@10c; live weight, 5½c; cows, fresh, $40@60; pigs, 8 to 10 weeks, $5@6 per pair; hay, good grade, $15@16; potatoes, 60c bu.; cabbage, 60c per 100; apples, $1. Farm operations well in hand. Work for next season progressing. The average number of public sales listed.—Benj. L. Diehl.

Erie Co., Pa. (N. W.), Jan. 15.—Weather very mild for the season. Little snow. Pork, dressed, 9c; veal, dressed, 13c; butter, 34c; eggs, 25c. Live stock thus far is in good condition, but little is being bought or sold at present. There is some corn to be husked yet. In the grape belt the farmers are pruning their vineyards and getting ready for the coming season.—L. Howard Morton.

Potter Co., Pa. (N. C.), Jan. 13.—Rainy weather all month. Beef and dairy cattle scarce. Chickens, 10c lb., alive; pork, 10c; butter, 38c; eggs, 30c doz.; apples, 50c bu.; potatoes, 55c bu. Some corn fodder not housed. No sleighing, and farmers are not busy. Some are breaking colts.—Louis J. Zundel.

Crawford Co., Pa. (N. W.), Jan. 10.—The recent Crawford County Teachers' Institute was a real success, with 400 to 500 in attendance. Four farmers' institutes are being held this week; all well attended. State lecturers were good, and farmers will adopt some practices advocated. Mild winter weather. Little sleighing yet. Stock looking good. Eggs, 28c; butter, 32c; apples, 50c; potatoes, 50c; hay, $11; pork, 9½@10c.

Kent Co., Md. (N. E.), Jan. 11.—Weather warm, with occasional showers. Live stock wintering well. Hogs, 7c, alive; veal, 11c; cattle, 6@7c. Wheat growing. Corn, 50c bu.; wheat, 95c bu. Farm work at standstill.—C. L. Turner.

Greene Co., Pa. (S. W.), Jan. 11.—Weather warm and rainy. Live stock not consuming much roughage, owing to the warm, wet weather, but are doing well. Very little stock selling. Wheat, $1.10 bu. at mill; oats, 40c; corn, 65c; apples, $1; eggs, 30c; butter, 30c lb. Farm work is at a standstill, owing to inclement weather. Wheat is fairly well started, but freezing and thawing is affecting it.—C. O. Addleman.

Huntingdon Co., Pa. (C.), Jan. 14.—Weather very changeable; has been mild. Live stock in good condition; good demand. Fall seeding in good condition for winter. Wheat selling at 90c; corn, 70c; oats, 50c; beef cattle, dressed, 10@12c; hogs, dressed, 9c; chickens, 10c; butter, 30c; eggs, 30c; lard, 12c. Many of our farmers took advantage of the instruction given at Farmers' Week at Pennsylvania State College. Some fall plowing done.—Clair L. Harnish.

STATE COLLEGE APPOINTMENTS

At a meeting of the executive committee of the Board of Trustees of the Pennsylvania State College, held January 20, Prof. R. L. Watts was elected Dean of the School of Agriculture and Director of the Pennsylvania Experiment Station. Prof. Carl W. Larson, former Assistant Professor of Dairy Husbandry, was made Professor in that department, to fill the position recently made vacant by the resignation of Professor Van Norman.

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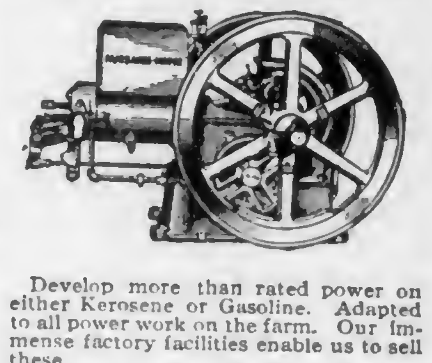

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Household

ENTERTAINING IN FEBRUARY

By Majoria March

St. Valentine's Day and Washington's Birthday, and, for a literary festivity, the birthday of Longfellow, all come in February to inspire a hostess to bid her friends to some pleasant informal gathering where a simple good time may be enjoyed and pretty decorations and favors add grace to the house and table.

Our illustrations show two pretty fancies, one for a centerpiece for a luncheon on St. Valentine's Day, and the other a pretty service of one of the courses for a Washington's Birthday supper.

In the first picture a round mirror is surrounded by graceful ferns and artificial roses and lilies of the valley. Three little "Cupid" dolls stand in the center holding white ribbon streamers, which are attached to heart-shaped boxes of candy which are favors for the guests. The goodies may be served in heart-shaped cases, as far as may be possible, the ice cream molded in heart shape and stuck with small arrows, and cakes, iced white, also in heart shape, may accompany the ice cream.

The second picture shows the table set with a flag for a cover. A platter is spread with flag doilies, and salad in a drum and flag shield cases offers it self as a tempting morsel in a dainty way.

For a St. Valentine's Day luncheon the guests may be asked in honor of some bride or some girl who is engaged. All may be asked to write an original valentine, and these may be read aloud during the luncheon, valentines being exchanged so that no guest reads her own.

Poems suggestive of Cupid and his art may be written on heart-shaped cards, and the guests asked to write below them the names of the authors. Another game to play after luncheon is to have some large paper hearts cut into pieces, each in its envelope, and have all try and put them together after the manner of the popular picture puzzles. Have a time limit, and give a prize to the person who can soonest mend their "broken heart." The prize could be a little china vase, in pink and white, ornamented with little Cupids. Or any gift in heart shape would be suitable.

For a Washington's Birthday party the invitations could be written on fancy little "hatchets" cut from thin cardboard, or little "cherry trees" may be outlined on square white cards and the bidding to a "cherry supper" may be written below.

A pretty centerpiece for the middle of the table is a big cake iced white with stripes of red frosting laid over. A square of the cake in the upper left hand corner can be left without the stripes, and this can be studded with blue candied violets.

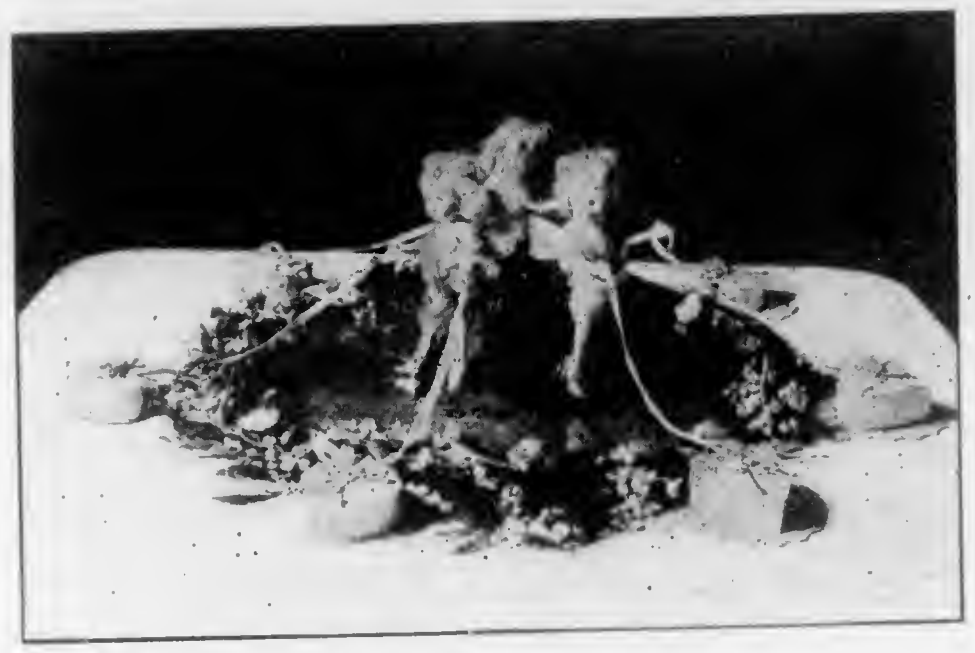
The supper may be what one chooses, but there can be a fruit salad with cherries. Either ice cream with cherries, or cherry jam meringue pudding may be the dessert, served with little cakes iced white, with an artificial cherry tree tied on top of each with a cherry-colored ribbon.

After supper all can try pinning "cherries" to the outline of the famous "cherry tree" of history, which can be traced on brown paper and hung at one end of the room, all to be blindfolded, of course, while they attempt this feat.

For a Longfellow party on the 27th of February (his birthday), the near-by country neighbors who belong to a literary society can be asked for an "Afternoon with Longfellow." The invitations may be written on postal cards with a picture of the poet, and other cards with pictures of scenes connected with the poet's life or with quotations from his books may be at the covers as place cards.

If partners are desired for supper or for any game, cards may be prepared with verses from one of his poems, half of the verses written on one card, half on the other, so that the members of the society must show their knowledge to find their partner.

Cards may be distributed also with quotations from the poet's works and a certain time given for each person to write from what poem they are taken.



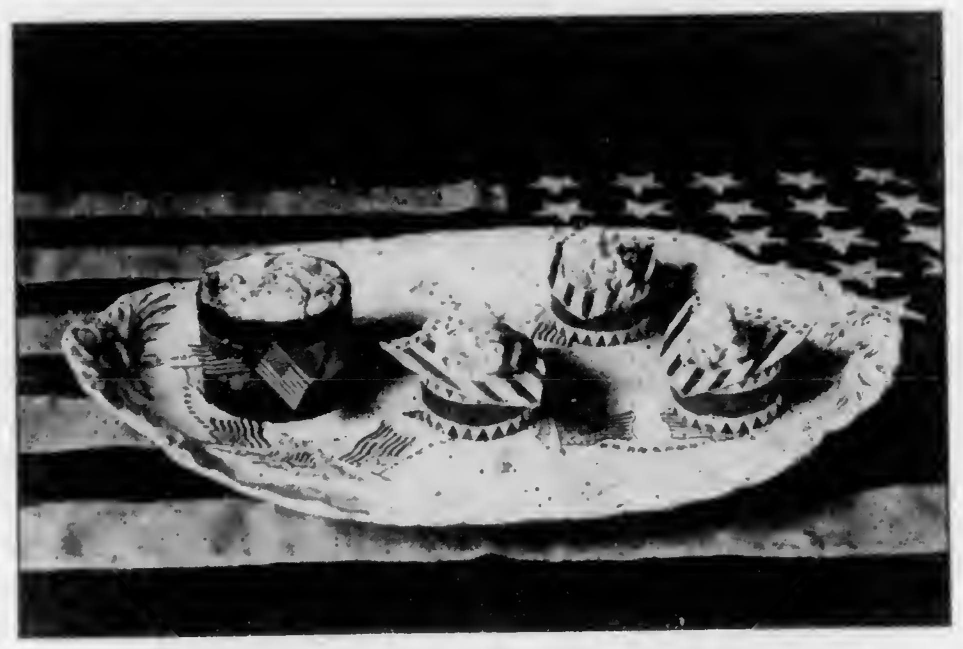
FAVORS FOR ST. VALENTINE'S DAY.

Selections may be read from his works, and if desired some tableaux might be given illustrating some of his best-known poems. In the country it is a good thing to start a small literary society, even if its purpose be more social than instructive, for it is a pleasure to meet together, and what one may learn of the great lives which have left their "footprints upon the sands of time" is in itself inspiring and broadening to quiet lives.

I give below some recipes with a February flavor that will be enjoyed by the guests who are bidden to the feast or by the home folks either.

Cherry Cakes

Cream a half cup of butter and add one cupful of granulated sugar and cream both together. Beat the yolks of three eggs until thick and add to the creamed sugar and butter with a cupful of milk, then add juice and rind of one lemon, three cupfuls of flour, in which two tablespoonfuls of baking powder have been incorporated. Add a pinch of salt, stir batter well and bake in well-greased cup tins until done. Ice white and lay a candied cherry on top of each, a raisin stem attached, and a "leaf" from the famous cherry tree, cut from majolica.



SALAD IN FLAG CASES FOR WASHINGTON'S BIRTHDAY.

Cupid Ices

Whip three egg whites to a stiff froth. Make a syrup of half a cup of sugar and one-fourth cup of water, letting it boil until it will form a soft ball when dropped in cold water, then pour this syrup onto the whites of the eggs, beating constantly until the mixture is cool, then add a few drops of any desired flavoring, a few drops of pink vegetable coloring and the whip from one pint of cream. Serve in little glass cups, topping each portion by a candy heart or by a wee candy Cupid.

Mock Turtle Soup

This makes a delicious first course for any luncheon. Use stock made from boiling veal, adding a little vinegar to the stock, about one tablespoonful to a quart of the liquor. Place one tablespoonful of butter in a pan and let brown, then stir in a tablespoonful of flour and stir until thoroly mixed, when add slowly, stirring all the time, a quart of the veal stock, one cup of strained tomato, four hard-boiled eggs, sliced very thin, and a cupful of veal meat cut into small cubes. A pretty way to serve any soup of this kind, or fish chowder for the first course at luncheon, is in round cups without handles, placing a round cracker on top of each portion.

Chicken Crustade

Cut some slices of bread an inch thick, cutting rounds from them with a round cutter. Fry these a delicate brown in butter. Scoop out the crumbs on one side and fill with chopped chicken, heated in a thick cream sauce. Oysters may be prepared in the same way, or any shredded meat, as crab meat or fish.

Apricot Jam Shortcake

These make a nice dish for any company supper. Make light soda or baking powder biscuits, sweetened slightly. When steaming hot break open each one and butter and spread with apricot jam. Serve with whipped cream.

Celery Puff

Stew some celery until tender. When cold add to it one cup of cream sauce, the beaten yolks of two eggs, and lastly the beaten whites. Mix thoroly and put into small buttered molds and bake in a quick oven. Serve at once. Hot toasted muffins are a delicious accompaniment to a dish of this sort.

For favors at a Valentine's party anything in heart shape will do, from a dainty little pin cushion to a collection of recipes written on heart-shaped cards and decorated with a little picture of wee Cupid cooking over the fire of love. For Washington Birthday favors little hatchet-covered booklets for any desired purpose would make cunning home-made gifts. Or any article decorated with a few artificial cherries, or a cherry stick pin or veil pin would be acceptable.

REVIVING THE MAKING OF QUILTS

By Hilda Richmond

At present quilt making is quite the fashion, and all the good old-fashioned patterns in piecing and quilting are being revived. The good old-time sentimental notions are also being revived, and mothers are saving pieces of every waist the boys wear and every dress the little girls have, to piece up for them when they go to housekeeping later. The pretty silks are carefully brought into the heavy, fragrant quilts used only for best and quilted with lavender-cented cotton or other delicately perfumed wadding. Even the ends of men's ties are clipped off while new and bright, because they "don't show anyway," and the saving in spreads is considerable, particularly for beds used by careful people. Quilts, particularly woolen quilts, are seldom popular for children, but young ladies who keep their things daintily clean, and people who take care of bedding can make a quilt last a long time, and it need not be a dark quilt either.

The very, very tiny blocks of two generations ago are not popular with busy ladies, but the ones taking the muslin and cambric scraps are always well liked. In every household there are hundreds of small white scraps that go to waste unless pieced up, and women like to have pick-up work for the long winter evenings. White and light-colored blocks are not hard on the eyes, and many housekeepers enjoy piecing quilts quite as much as fashionable city dames enjoy bridge or similar games. Then, too, every little girl must be started out in quilt work nowadays to be in the fashion, and pretty patches are in great demand.

Quilting parties are quite the thing in many country communities, and they certainly are delightful affairs. The hostess sets up two or three quilts and serves a dinner for the guests. There is much feasting and a great deal of talking, with a fair amount of work, and everyone is happy. Some of the elderly ladies come with carefully hoarded patterns in their hand-bags, and there is a great exchange of blocks on the occasion.

And even the busy ladies, who have no time for quilt piecing, get a great deal of good out of the pretty old fashion by saving up their blocks and passing them along to some shut-in or invalid or elderly woman who has few joys in life. Many a grandmother would be happier over the receipt of a big bundle of new, bright quilt pieces than a diamond ring, and no bit of white or dainty calico, gingham or silk should ever reach the rag bag. Even the ladies who have few to give combine with other busy mothers and make up a box of patches that will delight an old lady all winter. Sometimes the dressmaker, for a modest,

amount, will make up a large roll of pieces, or the merchant will secure from traveling men their discarded samples, so that it is easy to get materials for quilts. It does not pay to work up old goods, and it does not pay to use the flimsy materials; but good, substantial wash goods, woolens and silks are always in demand and always give good wear. The quilts may be simply or elaborately quilted, according to the time at command, but quilt making in any form has charms for women, and it is to be hoped that it will not be allowed to die out again.

THE CRANBERRY IN MANY FORMS

By Eva Ryman-Gaillard

Christmas feasts would be minus one of their fixed features if the luscious cranberry should be cut from the menu; but there is no need to confine its preparation to a few time-honored forms, for even tho the "other" ways of preparing may not be better, they will provide the variety that is both welcome and wholesome.

Plain cranberry jelly is delicious, but it does not become less so when changed in a foamy mound. To do so, cook a quart of berries in a pint of water until they burst open; put thru a colander and add a pint of sugar; cook five minutes, stirring thoroly. When cold, this gives a fine jelly, but it becomes something very different if, an hour or so before serving, it is beaten with an egg whip until foamy and the stiffly beaten whites of two eggs folded in as the finishing touch. Serve in large dish or in individual dishes, in rough looking mounds.

For Pies or Tarts.—Proceed as above until the berries have been put thru tho colander when, with the same proportion of sugar as called for in above recipe, a cupful of seeded raisins (plumped or steaming) may be added, and all cooked together for 10 or 15 minutes.

Frozen Whip.—Put one-fourth of a package of gelatine in four tablespoonfulls of cold water and set over warm water until entirely dissolved. Mix thoroly with a pint of thick sweet cream, and when this shows signs of stiffening, whip to a thick foam. Next, whip in, a spoonful at a time, a scant cupful of very sweet cranberry sauce. Pack in a form and freeze by packing in ice and salt, or by placing outdoors if the weather is cold enough to freeze.

Frozen Punch.—The whip, having cream in it, is served as a dessert, but this punch provides an unusual way of serving the berries with the meat course. Take equal measures of berries and water and cook to a pulp; put thru a fine colander to remove the skins; add a quart of water and a heaping quart of sugar to the pulp and allow to come to boiling heat. Cool the mixture and freeze. Serve in sherbet cups or long-stemmed glasses.

The berries for any of these dishes may be prepared several days in advance, if more convenient, and the freezing may be done 24 hours before serving. If the jellies or ices are made a little firmer than ordinary and served in slices, it makes a pleasing change of style.

Candied Cranberries.—Cranberries may be preserved in various ways for out-of-season use, but none are finer than the candied berries, which are equal to candied cherries for ornamenting cakes, puddings, ices and confections of all sorts. Pick out the finest colored and most perfect berries; weigh them and put into kettle with cold water to just cover them. Bring slowly to boiling heat, but do not allow to really boil. Add a weight of sugar to equal that of tho berries, and set where the contents of kettle will simmer until the berries are transparent. It will require a couple of hours, at least. When clear, lift on fork, drain off the syrup and lay berries on waxed paper. Dry in sunshine, or cool oven, until dry enough to permit packing in layers, between paraffine papers, in tin box or tightly closed glass jar.

Cranberry Syrup.—The syrup in which the berries were cooked, in above recipe, may be bottled for use, and is fine for many purposes, or the syrup may be made at any time as follows: Cook a quart of berries in a quart of water until very soft, and strain thru a cloth. Add a pound of sugar to each pint of juice and boil to a syrup. Bottle and seal. A tablespoonful of this syrup in a glassful of water makes a delicious drink, at any season, or the syrup provides for ices, sherbets and other things where the cranberry flavor is liked.

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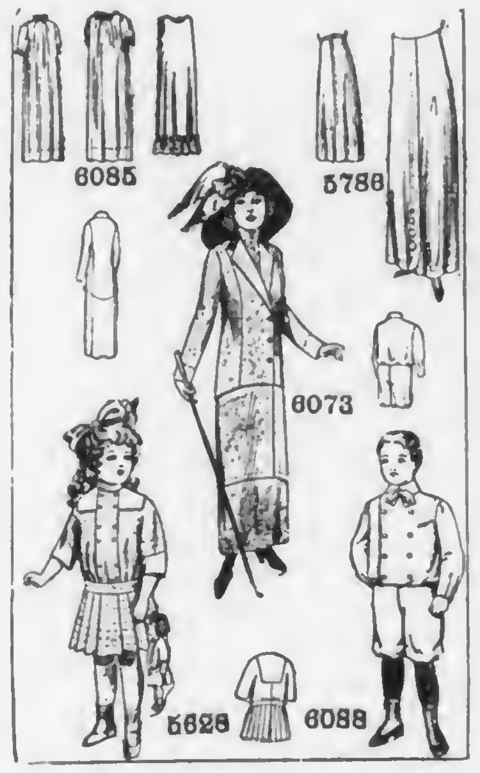

6085—Infants' Set.—Dress requires 2½ yards of 27-inch material, or 1⅞ yards of 36-inch material. Petticoat requires 1¼ yards of 27 or 36-inch material and 2 yards of edging. Price of pattern, 10 cents.

6073—Misses' Coat Suit.—This pattern is cut in 3 sizes, 14, 16 and 18 years. Age 16 requires 3⅜ yards of 54-inch material; ½ yard 24-inch velvet. The skirt may be made without the tunic effect. Price of pattern, 10 cents.

5786—Ladies' Five-Gored Skirt.—This pattern is cut in 5 sizes, 22 to 30 inches, waist measure. Size 24 measures 2⅜ yards around lower edge, and requires 3¼ yards of 44-inch material. Price of pattern, 10 cents.

5628—Girls' Dress, Closed at Back, with Body and Sleeves in One.—This pattern is cut in sizes 6, 8, 10 and 12 years. Age 8 requires 3¼ yards of 36-inch material; ½ yard of 27-inch contrasting goods. Price of pattern, 10 cents.

6088—Boys' Blouse Suit.—This pattern is cut in 5 sizes, 4 to 12 years. Age 8 years requires 3¼ yards of 36-inch material. Trousers finished with leg bands or elastic. Price of pattern, 10 cents.

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Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., Jan. 27, 1913.

Butter receipts were light and good stock commanded full prices. Eggs were in greater receipts, and values on almost all grades were lower. Poultry receipts and demands were about equal, with prices steady. Trading in fruits and vegetables was normal at unchanged prices.

Butter.—Western creamery, 36c; extras, 34c; firsts to seconds, 28@32c; special prints, 40@43c; near-by prints, 35@37c.

Cheese.—New York full cream, 18@18½c; skims, 11@15c, according to quality.

Eggs.—Candled, 29@31c doz.; extras, 27c. Current receipts at $6.90@7.20 per standard case.

Poultry.—Fowls, 14@15c; old roosters, 11½@12c; spring chickens, 15@16½c; ducks, 16@17c; pigeons, 18@25c pair; turkeys, 18@19c.

Dressed Poultry.—Western fowls, 17c; roosters, 13c; chickens, 16@18c; turkeys, 20@23c.

Vegetables.—White potatoes, choice, 73@75c bu. Onions, 35@40c bu. Cabbage, $7.00@9.00 ton. Lettuce, $1@1.50 basket. Cucumbers, $2.75@3.50 basket. Celery, 25@50c bch. Spinach, 75c@$1 bbl. Kale, 40@50c bbl. Egg plant, $2.25@2.75 box. String beans, $1.50@2.25 bu. Peas, $2@4 basket. Peppers, $1.50@2.25 carrier. Tomatoes, $2.00@3.25 carrier.

Fruit.—Apples, choice varieties, 25@75c hamper, $2.00@3.50 bbl. Cranberries, $5.00@8.50 bbl.; $1.75@2.75 crate.

Hay and Grain.—No. 1 timothy, new, $19.50@20.00; No. 2, $17.50@18.00; No. 3 do., $15.00@16.00. No grade, $10.00@12.00. Clover, mixed, No. 1, $16.00@17.00; No. 2 do., $14.00@15.00. No. 1 tangled rye straw, $13.50@14.00; No. 1 oats straw, $11.00@11.50. New shelled corn, as to quality, 54@58c; new cob, 56@57c per 70 lbs. No. 2 red wheat, 99c@$1.00; No. 3 do., 97@98c. No. 2 white oats, 40@40½c. Standard white, 39@39½c; No. 3 white, 38@38½c.

Hides and Skins.—Steers, abattoir, 17@17½c; do. country, 14@14½c. Cows, abattoir, 15@15½c; do. country, 13c. Bulls, abattoir, 13c; do. country, 11c. Calf skins, Nos. 5 to 12 and up, $1.35@2.45; do. green, 13@14c lb.

Seeds.—Timothy, $3.15@3.25 bu.; clover, white, $25; do. crimson, $6.25; do. mammoth, $14.50; do. sweet, $13.00; do. alsike, $13.25; red top, per bu., $13.50; alfalfa, $7.00@10.00; Canada field peas, $2.35; vetch, $8.50; rye, winter, $1.35; spring, $2.25; soy beans, $3.25; barley, $2.50; buckwheat, $1.50; cowpeas, $3.00@3.25; millet, $1.90@2.75; oats, $1.20; wheat, $1.70@2.00.

Coffee.—Rio, 7s, 13¾c; Santos, 4s, 15⅝c. Mild Coffee—Cordova, 16@18c.

Provisions.—City beef, smoked and air-dried, 21@22c. Beef hams, 29@31c. Pork, family, $21.00@22.00. Hams, cured, 13¾@14½c; skinned, 12@12¾c; smoked, 14@16c. Other hams, smoked, city cured as to brand, 15@16c. Picnic hams, 11¼@11½c; do. smoked, 13@13½c. Bellies in pickle, 13½@14c. Breakfast bacon, as to quality, 16@20c. Lard, refined, 11¼@11½c; do. in tubs, 11¼@11⅝c; do. kettle rendered, 11@11½c. Tallow, prime city, 6¾c; do. country, 6⅜c; do. dark, 5¾c; do. cakes, 7c.

Sugar.—Cut loaf, $5.40 cwt.; cubes $4.85; powdered, $4.70; granulated, $4.60; standard granulated, $4.65; crystal A, $4.60.

Flour.—For 196 lbs., in wood, winter clear, new, $4.10@4.30; do. straight new, $4.50@4.75; favorite brands, $5.00@5.35. Rye flour, Penna., $3.60@3.75.

BALTIMORE PRODUCE

Baltimore, Md., Jan. 27, 1913.

The demand for butter declined during the week, and prices were barely steady. Eggs were in good demand and steady, especially on the better grades. Prices advanced a shade on live poultry, altho dressed poultry has been dull and sluggish. Trading in fruits and vegetables was active at former prices.

Butter.—Creamery, fancy, 34@34½c; do., choice, 32@33c; prints and blocks, 33@36c. Maryland and Penna. rolls, 20@22c; prints, 20@21c. Process, 26@27½c.

Cheese.—Flat, 17½c; Daisy, 18@18½c.

Eggs.—Md. and Penna., firsts, 23c; western, 23c; southern, 21@22c.

Live Poultry.—Hens, 14@15c; chickens, 17@18c; old roosters, 9@10c. Turkeys, 20@21c. Ducks, 15@16c. Geese, 14@15c. Guinea fowls, 30@45c each.

Dressed Poultry.—Turkeys, 20@21c; chickens, 17@18c; roosters, 10@11c; ducks, 16@17c; geese, 15@16c.

Vegetables.—Potatoes, white, 65@70c bu. Sweets, $2.25@2.75 bbl. Cabbage, $4.00@5.00 per ton; Danish, $8.00@9.00. Onions, 40@50c bu. Lettuce, 50@75c basket. Egg plant, $2.50@3.00 crate. Peppers, $1.50@2.00 crate. Squash, $1.50@2.00 basket. Spinach, 40@50c box. Cucumbers, $3.00@4.50 basket. Beans, green, $2.25@2.75 basket. Celery, $2.50@4.50 crate. Turnips, 15@20c box. Cauliflower, $2.50@2.75 bbl. Horseradish, $1.00@1.50 box. Beets, 40@45c bu.

Fruit.—Apples, new, $2.00@3.50 bbl., 50c@$1.00 bu. Cranberries, $8.00@9.50 bbl.

Grain.—Wheat.—No. 2 red western, $1.07; contract, $1.07½. Corn, new, 56½@57c; contract, 54½c. Oats, No. 2 white, 39@39½c; standard white, 38@38½c; No. 3 white, 37@37½c. Rye, 55@65c.

Hay and Straw.—No. 1 timothy, $18.50@19.00. No. 2 timothy, $16.50@17.00. No. 3 do., $14.00@16.00. Choice mixed, $16.00@16.50. No. 1 clover, $13.00@13.50. No. 2 do., $10.00@12.00. No. 1 tangled rye straw, $12.50@13.00. No. 1 oat straw, $9.00@10.00. No. 1 wheat straw, $8.00@9.00.

Millfeed.—Spring bran, $23.50@24.00. Middlings, flour to white, $26.00@28.00; western middlings, $24.00; city mills mids., $24.00@24.50.

NEW YORK PRODUCE

New York City, Jan. 27, 1913.

Fresh creamery butter was considerably stronger than last week. Good grades advanced 1c. The supply of eggs continues ample. No increase in demand has been noticed, and most grades are a shade lower than last week. Dressed poultry offerings were moderate, while live stock continued dull and inactive. Fruits and vegetables were normal at about unchanged prices.

Butter.—Creamery firsts to extras, 31@35c; thirds to seconds, 25@30c; factory, 19@24c; state dairy, 22@33c; packing stock, 17@21½c; process, 19@26½c.

Cheese.—Whole milk special, 18c; do., common to fancy, 16@17¾c; skims, 8@14¾c.

Eggs.—State and near-by, 27@31c; fresh gathered, 23@27c; mixed, 24@26c; refrigerator, 12@19½c.

Dressed Poultry.—Turkeys, dry, 19@23½c; chickens, Penna., 18@26c; fowls, 14@17c; old roosters, 13c; ducks, 16@19c; roasters, 19@20c.

Live Poultry.—Fowls, 12½@14c; chickens, 12½@13c; roosters, 10c; ducks, 14@15c; geese, 14c.

Grain.—Easy. Wheat, No. 2 red, $1.10½; No. 1 Northern, 99¾c. Corn, 56½c. Oats, standard white, 39c.

Vegetables.—Potatoes, state, $1.75@2.00 per 165-lb. bag. Cabbage, $3@4 ton; do. Danish, $6.00@9.00 ton. Green beans, $1.00@3.00 basket. Carrots, $1.00@1.50 bag. Cucumbers, $1.00@1.50 dozen. Lettuce, 25c@$1.00 basket. Squash, $1.50@2.00 bbl. Celery, $2.50@5.50 case. Horseradish, $3.00@5.00 cwt. Parsnips, 75c@$1.00 bbl. Turnips, $1.00 bbl.

Fruit.—Apples, $1.75@4.00 bbl., according to variety. Pears, 50c@$1.10 basket. Cranberries, $6.00@10.00 bbl.

YORK PRODUCE MARKET

York, Pa., Jan. 27, 1913.

The markets during the week were without new features, except the unusual decline of the egg market. Butter was steady at all markets, with supply about equal to the demand. Potatoes are moving slowly at a low figure, and shippers are again sending them away by the carload at 5 to 10 cents advance over York prices. Shipped strawberries of fine appearance were displayed for the first time this season.

Butter.—Country, 28@32c; separator, 33@35c. Milk, 6c per qt.

Eggs.—22@25c.

Poultry.—Hens, 13c. Dressed poultry, 45@75c each.

Vegetables.—Potatoes, 10c half peck; 50@60c bu.; cabbage, 2@4c each; lettuce, 2@6c; beets, 3@5c bunch, 10c per ½ pk.; radishes, 2@5c; turnips, 8@10c per ½ pk.; onions, 10c per ½ pk.; Lima beans, 10@14c qt.; soup beans, 10c qt.; celery, 3@8c stalk; sweet potatoes, 10c per ½ peck; spinach, 10c per ½ peck; parsnips, 10c per ½ pk.; sauer kraut, 5@8c qt.; lard, 12@14c lb.; corn meal, 5@6c qt.

Fruit.—Apples, 10@25c a half peck; grapes, 10@15c ½ pk.; pears, 10@15c per ½ pk.; chestnuts, 10@20c qt.; walnuts, 12@15c per ½ pk.

Retail Grain Market.—Wheat, $1.10; corn, 68c; oats, 50c; bran, $1.35 a cwt.; rye, 78c; middlings, $1.55 a cwt.

Wholesale Grain Market.—Wheat, $1.03; corn, 57c; oats, 40c; rye, 68c.

WASHINGTON PRODUCE

Washington, D. C., Jan. 27, 1913.

Eggs.—Near-by, fresh, per dozen, 23c; southern, per dozen, 22c.

Cheese.—New York, new, per pound, 19c; flat, 19c.

Butter.—Best prints, per pound, 36c; tub, 35c; process, 27@28c; undergrades, 25c.

Live Poultry.—Hens, per lb., 14c; roosters, 9c; springers, 17@18c; turkeys, 19@20c; geese, live, 12@13c; ducks, 13@15c.

Vegetables.—Potatoes, bbl., $1.25@1.65; 50@75c bu. Onions, 90c@$1.10 per 100-lb. bag. Lettuce, per bas., 75c@$1.50. Beans, $1.50@2.50 basket. Peppers, per crate, $1.00@1.50. Egg plants, per box, $2.25@3.00. Squash, per bbl., $1.25@1.75. Beets, $1.50@2.00 per 100 bchs. Mushrooms, per lb., 25@40c. Carrots, 1½@2½c bch. Cabbage, $2.00@3.50 bbl. Radishes, 50c@$1.00 per 100. Cauliflower, $1.50@2.50 crate. Apples, $1.50@4.50 bbl.

WILMINGTON PRODUCE

Wilmington, Del., Jan. 27, 1913.

Trading on the markets during the week was normal, and prices remained unchanged. A change in weather is expected to bring an increase in activities and higher prices.

Fruits.—Apples, 50c basket. $2.50@4.00 bbl. Grapes, $4.00@6.50 keg.

Vegetables.—Potatoes, 80c bu.; $2.00 bbl. Cabbage, 75c@$1.00 bbl.; 25c basket. Onions, 40c basket. Celery, 25@50c doz. Spinach, $1.50 bbl. Sweet potatoes, 75@80c basket; $3.00@3.50 bbl. Kale, $1.25 bbl. Carrots, 10c ½ pk. Lettuce, $1.50 basket.

Poultry.—Chickens, live, 15@16c; do., dressed, 16@17c. Ducks, 14c lb.; dressed, 17c.

Eggs.—29c; storage, 22@24c.

Butter.—Creamery, 29@33c; prints, 36@43c.

BUFFALO PRODUCE

Buffalo, N. Y., Jan. 27, 1913.

Butter.—Steady. Creamery choice, 34@35c; choice dairy, 30@31c.

Cheese.—Quiet and steady. Fancy, 18c; good, 17@17½c.

Eggs.—Lower. State, candled, 22@26c; storage, 20@23c.

Dressed Poultry.—Active. Turkeys, per lb., 23@25c; fowls, fancy, 14@16c; chickens, 15@18c; old roosters, 12@13c; ducks, 20@21c; geese, 17@18c.

Live Poultry.—Easier. Chickens, 13@16c; ducks, 16@18c; geese, 14@16c; turkeys, 18@20c.

Vegetables.—Potatoes, firm. Home-grown, 65@68c bu. Cabbage, $1.50@2.50 per 100. Onions, 65@80c bu. Beans, green, $2.00@3.50 hamp. Turnips, 75@80c bbl. Celery, 25@35c doz. Lettuce, 40@70c.

Beans.—Quiet, steady. Marrow, fancy, $3.30@3.40; medium, $2.50@2.60; red kidneys, $2.75@3.00.

Fruits.—Apples, $2.25@3.00 bbl.; 50@75c bu.

Honey.—Firm. No. 1 fancy, 17c; No. 2 new, 14@15c; dark, 12c.

Hay.—Steady. Timothy, choice, on track, $18.50; No. 1 do., $18.00; No. 2, $17.00; light mixed, No. 1, $16.50; rye straw, $10.00@11.00; oat and wheat straw, $9.00@10.00.

Feed.—Steady. Spring bran, $22.50 ton. Standard mids., $22.75. Cornmeal, $24.00. Gluten, $27.50. Hominy, $24.25.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., Jan. 27, 1913.

The cattle market was unsteady and a shade lower in sympathy with other markets, especially on the better grades of stock.

	Beef Cattle	Sheep and Lambs	Hogs
Total for week	5,023	13,707	6,061
Previous week	4,913	12,900	5,352

Best steers	$8.00@8.15
Choice steers	7.87½@8.00
Good	7.50@7.75
Medium steers	6.75@7.25
Common steers	6.25@6.50
Bulls	4.25@6.50
Fat cows	4.75@6.75
Thin cows	2.50@3.00
Milk cows	40.00@65.00

Veal calves are steady.

Best calves	$11.00@12.00
Good to choice do.	10.00@10.50
Medium	7.00@8.00
Common do.	6.50@6.75
Thin do.	5.00@8.00

Sheep and lambs were steady at unchanged figures.

Sheep and lambs were somewhat dull. Prices barely remained steady.

Extra wethers	$6.25@6.50
Choice wethers	5.75@6.00
Good wethers	5.25@5.50
Common to medium	3.00@5.00
Ewes, fat	5.00@5.50
Extra lambs	9.50@9.75
Good to choice do.	9.00@9.25
Common to medium	5.75@8.25

Hogs are about steady, westerns selling at $10.50@10.75.

City Dressed Stock.—Choice classes of dressed meat are steady. Trade is normal. Steers, 10@13½c; heifers, 9@12c; cows, 7½@10½c. Veal calves, 14@16c; country dressed calves, 13@14½c; extra do., 15c. Sheep, 9@10c; extra wethers, 11c. Spring lambs, 14@15c. Hogs, 11c.

NEW YORK LIVE STOCK

New York City, Jan. 27, 1913.

Cattle receipts were 3,789 head. The market is irregular.

Steers	$4.50@8.30
Bulls	4.75@6.25
Cows	3.25@6.00

Dressed beef steady at 9½@12½c for native sides; $8.50@10.00 for light weights.

Calf receipts were 2,580 head. The market is steady to 25c lower on veals.

Choice veals	$12.00@12.50
Good veals	8.50@11.50
Culls	6.00@8.00
Barnyard calves	4.50@5.00
Fed calves	6.00@8.00
Westerns	3.50@5.00

Dressed calves are steady.

City-dressed veals	14@18½c
Country-dressed veals	10@16½c

Sheep and lamb receipts were 10,352 head. Sheep are lower and lambs 10@15c higher.

Sheep	$3.75@5.55
Culls	2.50@3.50
Lambs	7.50@9.25
Culls	5.50@7.00
Yearlings	6.00@8.00

Hog receipts were 14,228 head. The market is steady to firm.

Light to heavy	$7.90@8.00
Pigs	8.00@8.10

BALTIMORE LIVE STOCK

Baltimore, Md., Jan. 27, 1913.

Beef receipts for the week were 1,661 head. The market is steady.

Steers	$4.75@8.35
Heifers	4.25@6.75
Cows	2.00@5.40
Bulls	3.25@5.25
Fresh cows	$27.50@77.50

Sheep and lamb receipts were 3,517 head. The market is quiet.

Sheep	$3.00@5.75
Lambs	6.50@9.30

There were 17,705 hogs on sale during the week. Market steady.

Light westerns	$8.00@8.15
Heavy to medium	8.00@8.25
Near-by	8.00@8.05
Pigs	7.50@7.75
Roughs	6.00@7.50

Calf receipts for the week were 264 head. The market is easier, with calves at $5.50@10.00.

BUFFALO LIVE STOCK

Buffalo, N. Y., Jan. 27, 1913.

Cattle receipts today were 130 loads. The market was 10 to 15 cents higher on all grades.

Choice heavy steers	$8.40@9.75
Medium	7.75@8.25
Yearlings	7.25@8.25
Plain heavy	6.75@7.25
Handy butchers	7.00@7.75
Good to choice fat cows	5.00@6.50
Good to choice heifers	5.50@7.50
Butcher bulls	4.75@6.75
Feeders	5.40@6.60
Stockers	4.50@5.65
Cows and springers	40.00@85.00

Calf receipts today were 750 head. The market was active and steady.

Choice veals	$11.00@11.50
Light and thin	4.00@6.50

There were 65 cars of sheep and lambs on sale today. Both sheep and lambs sold strong.

Choice lambs	$9.00@9.25
Poorer grades	6.00@6.50
Yearlings	7.00@8.25
Wethers	6.00@6.25
Ewes	5.25@5.75
Sheep	5.75@6.00

Today's hog receipts were 17,000 head. The market rallied somewhat and overcame the general decline of last week.

Heavies	$6.75@7.75
Mixed and medium	6.75@7.75
Yorkers	7.75@7.85
Light Yorkers	7.75@7.85
Pigs	7.75@7.85
Stags	5.50@6.25
Roughs	6.70@6.85

PITTSBURGH LIVE STOCK

Pittsburgh, Pa., Jan. 27, 1913.

Today's cattle receipts were 115 loads. The market was very slow at barely steady prices and a moderate demand. Bulls and heifers were about steady, and fat cows slow and easier.

Good to choice	$8.20@8.40
Good, 1300 to 1400 lb.	8.00@8.20
Medium to good, 1200-1300 lb.	7.60@8.00
Tidy, 1050-1150 lb.	7.65@8.15
Fair to medium, 900-1100 lb.	7.00@7.50
Common to good fat oxen	4.00@6.00
Common, 700-900 lb.	5.00@6.00
Common to good fat bulls	3.50@7.00
Common to good fat cows	3.75@6.50
Heifers, 700 to 900 lbs.	4.25@7.50
Bologna cows	3.50@4.00
Fresh cows and springers	25.00@80.00

Calves.—Receipts were 600 head. The market is 50 cents per cwt. lower.

Heavy and thin calves	$5.00@7.50
Veal calves	8.00@11.00

Hogs.—Today's hog receipts were 70 double-deck loads. The market was steady with the close of last week, but about 20 cents lower than a week ago.

Prime heavy	$7.65@
Prime medium weights	7.80@
Heavy mixed	7.75@
Best heavy Yorkers	7.85@
Light Yorkers	7.90@
Pigs as to quality	7.75@7.90
Common to good roughs	6.50@6.90
Stags	5.50@6.00

The supply of sheep and lambs today was 30 double-deck loads. The demand was light on choice lambs, while other grades were dull and from 25 to 50 cents lower.

Prime wethers	$5.75@6.00
Fair mixed ewes and wethers	4.75@5.25
Culls and commons	2.50@3.50
Spring lambs	6.00@9.00
Good mixed	5.50@5.80

PITTSBURGH HAY AND GRAIN

Pittsburgh, Pa., Jan. 27, 1913.

Receipts of low-grade, and especially reshed hay, continue excessive. The arket is overstocked with this grade hay, and sales are slow and at untisfactory figures. Clover hay is hard dispose of, especially No. 2, but timhy is in fair demand, and also No. 1 ght clover mixed. Straw receipts are rmal, but demands are light and e market is dull. No. 1 timothy, 6.00@16.50; No. 2 do., $14.00@15.00; o. 3 do., $12.00@13.00; No. 1 light ixed, $14.50@15.00; No. 1 clover ixed, $14.50@15.00; No. 2 do., $12.00 13.00. No. 1 clover, $14.00@14.50; o. 2 do., $12.00@13.00. No. 3 prairie, 1.00@11.50; No. 4 do., $9.00@10.00. o. 1 oat straw, $9.50@10.00; No. 2 ., $9.00@9.50; No. 1 wheat, $9.50@0.00; No. 2 do., $9.00@9.50; No. 1 e, $11.00@11.50. No. 2 do., $9.50@.00. Ear corn arrivals are in good deand. Market strong. No. 2 yellow, @56c. No. 2 high mixed, 54@55c. elled corn is active and firm; arrivals e easily placed at market quotations. o. 2 yellow shelled, 56½@57½c; No. 3 ., 55½@56c; No. 3 natural, 54½@55c; mple, 53@54c. Oat receipts are fully ual to the demand. Market quiet. No. white, 37@37½c; standard, 36@36½c; o. 3 do., 35@35½c; No. 4 do., 33½@34c; e demand for middlings is very slow, t bran has improved. Market dull. o. 2 white mids., $25.00@25.50; No. 1 own mids., $22.50@23.00. Winter eat bran, coarse, $23.00@23.50; do., dium, $22.50@23.00.

ELGIN BUTTER QUOTATION

Elgin, Ill., Jan. 27, 1913.

The quotation committee of the Elgin ard of Trade this afternoon declared tter firm at 33c a pound.

NEW YORK MILK QUOTATION

The wholesale milk price is $1.81 per quart can for class C; class B, $1.91.

TOBACCO MARKET

Those who went to Washington in position to the proposed reduction in bacco tariff are of the opinion that efforts are futile, and that the hedule of reduction has already been epared and will be presented at the oper time and made a law. Encoured by this, it is said that measures e being taken to reduce the tariff on gar also.

A large amount of the 1912 crop has been delivered to the United Cigar Manufacturers' Company. Packing has commenced, giving employment to large numbers of men. Stripping is progressing well with the prevalent mild weather, the one danger being that tobacco contains too much moisture, thus subjecting it to the danger of burning and heating in the pile. There was very little buying, notwithstanding the fact that but one-fourth of the crop remains unsold. The few sales were at approximately $10@4 per cwt.

Mr. J. Aldis Herr, who espoused the cause of growers in opposition to tariff reduction, and who is president of the Tobacco Growers' Society, has been notified that the Department of Agriculture is increasing the annual appropriation for tobacco experiments. Curing methods will receive special attention the coming season, and growers should be much benefited.

The final report of the 1912 tobacco crop places the total acreage at 1,225,000; yield, 785.5 pounds per acre; production, 962,855,000 pounds; average price paid farmers, $10.8 per cwt; tatal value, $104,063,000. The price per cwt. and value of the more important cigar types are as follows: New England States, $24; total $9,589,000. New York, $12.60; total, $655,000. Pennsylvania, $8.50; total, $5,488,000. Ohio (Miami Valley), $8; total, $4,277,000. Wisconsin, $11; total, $5,988,000. Georgia and Florida, $30; total, $1,130,000.—H. E. Tweed, January 27, 1913.

CATALOG NOTES

Separator Facts.—The new American Cream Separator catalog is now ready for distribution. It contains 72 pages of beautifully illustrated matter telling about the manufacture and use of these well-known machines, and is full of facts which every separator user should know. It is free for the asking. Address American Separator Co., Box 1123, Bainbridge, N. Y.

Patent Round Silos.—The Harder Mfg. Co. is mailing a new catalog of silos. The booklet describes the three styles of Harder silos, which are made in 200 sizes. This is one of the pioneer companies in silo manufacture, and their product is still in the front rank. The catalog will be sent free upon request addressed to Harder Mfg. Co., Box 18, Cobleskill, N. Y.

Shade Trees.—"The How and Why of Shade Trees and Evergreens" is the title of a booklet being sent out by the Harrison Nurseries, Berlin, Md. It gives valuable information on selection of trees for planting, where and how to plant and getting best artistic effect from trees. It is free upon request to the above address. Say that you are a reader of Pennsylvania Farmer.

The Perfection Sprayer.—No farm is well equipped unless it has a spray outfit, and as spraying has come to be a necessity on every farm, the machine that will do the most work and do it well has come into general demand. The Perfection six-row sprayer meets this demand. It is made in smaller sizes and for a wide range of uses. A new catalog will be sent free if you write for it, addressing Thomas Pepplar & Son, Box 120, Hightstown, N. J.

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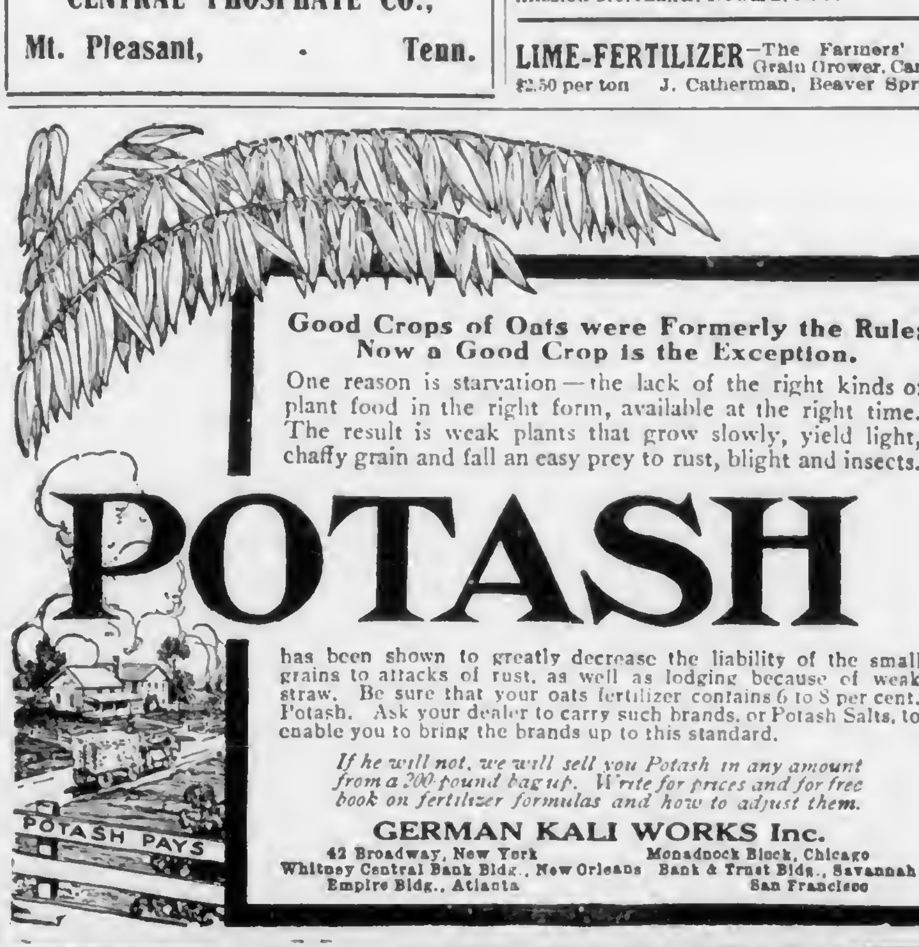

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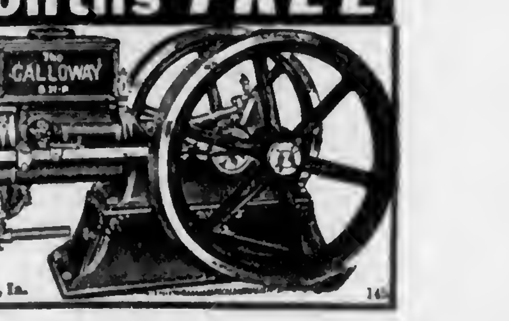

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SECRET SERVICE

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BOOK II

WHAT HAPPENED AT NINE O'CLOCK

CHAPTER XI (Concluded)

Forey stared at her helplessly. What might have resulted, it is impossible to say, for there entered at that opportune moment, Mr. Arrelsford himself, relieving Mr. Foray of the further conduct of the intricate case. His glance took in all the occupants of the room. It was to his own messenger that he first addressed himself.

"Eddinger!"

"Yes, Mr. Arrelsford."

"Didn't you get here in time?"

"Yes, sir."

"Then why——"

"I beg your pardon," said Foray, "are you Mr. Arrelsford of the Secret Service Department?"

"Yes. Are you holding back a despatch?"

"Yes, sir."

"Why didn't Eddinger bring it to me?"

"Well, you see——" began Foray, hesitating, "Miss Mitford——"

Arrelsford instantly comprehended.

"Eddinger," he said.

"Yes, sir."

"Report back to Corporal Matson and tell him to send a surgeon to the prisoner who was wounded at General Varney's house, if he isn't dead by this time. Now let me see that despatch," he continued, as the orderly saluted and ran rapidly from the room.

But again Miss Mitford interposed. She stepped quickly between Arrelsford and Foray, both of whom fell back from her.

"I expect," she said impudently, "that you think you are going to get my telegram and read it?"

"I certainly intend to do so," was the curt answer.

"Well, there's a great disappointment looming up in front of you," returned Caroline defiantly.

"So!" said Arrelsford, with growing suspicion. "You have been trying to send out something that you don't want us to see."

"What if I have, sir."

"Just this," said Arrelsford determinedly. "You won't send it out and I will see it. This is a case——"

"This is a case where nobody is going to read my private writing," persisted Caroline.

The young girl confronted him with blazing eyes and a mien like a small fury. Arrelsford looked at her with ill-concealed yet somewhat vexatious amusement.

"Lieutenant Foray, you have an order to give me that despatch. Bring it to me at once," he said.

Altho it was quite evident that Foray greatly disliked the role he was compelled to play, his orders were plain, he had no option. He stepped slowly toward the Secret Service Agent, only to be confronted by old Martha, who again interrupted.

"Dat Leftenant kin stay jes whah he is," said the old negress defiantly.

A struggle with her would have been an unseemly spectacle, indeed, thought both men.

"Is that Miss Mitford's despatch you have in your hand?" asked Arrelsford.

"Yes, sir."

"Since you can't hand it to me, read it."

Caroline turned to him with a gasp of horror. Martha gave way, and Foray stood surprised.

"Read it out! Don't you hear me?" repeated Arrelsford peremptorily.

"Don't' you dare do such a thing," cried Caroline, "you have no right to read a private telegram."

"No, suh! He ain't got no business to read her lettahs, none whatsomebah! urged Martha.

"Silence!" roared Arrelsford, his patience at an end. "If either of you interfere any further with the business of this office, I will have you both put under arrest. Read that despatch instantly, Lieutenant Foray."

The game was up so far as the women were concerned. Caroline's head sank on Martha's shoulder and she sobbed passionately, while Lieutenant Foray read the following astonishing and incriminating message:

"'Forgive me, Wilfred darling, please forgive me, and I will help you all I can.'"

It was harmless, as harmless as it was foolish, that message, but it evidently impressed Mr. Arrelsford as containing some deep, some hidden, some sinister meaning.

"That despatch can't go," he said shortly.

"That despatch can go," said Caroline, stopping her sobbing as suddenly as she had begun. "And that despatch will go. I know someone whose orders even you are bound to respect, and someone who will come here with me and see that you do it."

"It may be," answered Arrelsford composedly. "I have a good and sufficient reason——"

"Then you will have to show him, I can tell you that, Mr. Arrelsford."

"I shall be glad to give my reason to my superiors, Miss Mitford, not to you."

"Then you will have to go around giving them to everybody in Richmond, Mr. Arrelsford," said the girl, as she swept petulantly thru the door, followed by old Martha, both of whom were very much disturbed by what had occurred.

CHAPTER XII

Thorne Takes Charge of the Telegraph Office

Arrelsford stared after the departing figures with a mixture of amusement, contempt, and annoyance in his glance. Soon as the door had closed behind them he turned to Lieutenant Foray, who was regarding him with ill-concealed aversion.

"Let me have that despatch," he began in his usual peremptory manner.

"You said you had an order, sir," returned Foray stubbornly.

"Yes, yes," replied the Secret Service Agent impatiently, throwing an order on the table, "there it is, don't waste any time."

But Lieutenant Foray was not satisfied, principally because he did not wish to be. He scrutinized the order carefully, and with great distaste at its contents. It was quite evident that if he could have found a possible pretext for refusing obedience, he would gladly have done so. His sympathies were entirely with Miss Mitford.

"I suppose you are Mr. Benton Arrelsford, all right?" he began deliberately, fingering the paper.

"Certainly I am," returned Arrelsford haughtily.

"We have to be very careful nowadays," continued Foray shortly. "But I reckon it's all right. Here's the telegram."

"Did the girl seem nervous or excited when she handed this in?" asked the other, taking the message.

"Do you mean Miss Mitford?" asked Foray reprovingly.

"Certainly, who else?"

"Yes, she did."

"She was anxious not to have it seen by anybody?"

"Anxious, I should say so. She didn't even want me to see it."

"Umph!" said Arrelsford. "I don't mind telling you, Mr. Foray, that we are on the track of a serious affair and I believe she's mixed up in it."

"But that despatch is to young Varney, a mere boy, the General's son," urged the Lieutenant.

"I didn't know he had gone to the front. So much the worse. It's one of the ugliest affairs we have ever had. I had them put me on it, and I have got it pretty close. We have had some checks, but we will end it right here in this office inside of thirty minutes."

There was a slight tap on the door at this juncture. Arrelsford turned to the door, opened it, and found himself face to face with a soldier, who saluted and stood at attention.

"Well, what is it?"

"The lady's here, sir," said the soldier.

"Where is she?" asked Arrelsford.

"Waiting down below at the front entrance."

"Did she come alone?"

"Yes, sir."

"Show her up here at once. I suppose you have a revolver here," continued the Secret Service man, turning to Lieutenant Foray, who had listened with much interest.

"Certainly," answered Foray, "we are always armed in the telegraph office."

From a drawer on the table he drew forth a revolver which he laid on the top of the table.

"Good," said Arrelsford, "while I want to handle this thing myself, I may call you. Be ready, that's all."

"Very well."

"Obey any order you may get, and send out all despatches unless I stop you."

"Yes, sir."

"And if you don't mind, I don't care to have all these messenger boys coming back here. I will order them to stop in the hall. If you have any messages for them, you can take them out there. I don't want to have too many people in the room."

"Very good, sir. Will you give the order to your orderly when he brings up the young lady?"

"Yes."

Arrelsford stepped to the door, and Foray busied himself with the clicking instruments. After a few minute's conversation with the orderly, who had just returned, Arrelsford ushered Edith Varney into the room. With not even a glance at the operator in her intense preoccupation, the girl spoke directly to Arrelsford.

"I—I've accepted your invitation, you see."

"I am greatly obliged to you, Miss Varney," returned Arrelsford with deferential courtesy. "As a matter of justice to me, it was——"

"I didn't come to oblige you," answered Edith haughtily.

She had never liked Mr. Arrelsford. His addresses had been most unpleasant and unwelcome to her, and now she not only hated him but she loathed him.

"I came here," she continued, as Arrelsford attempted to speak, "to see that no more——" her voice broke for a moment, "murders are committed here—to satisfy your singular curiosity."

"Murders!" exclaimed Arrelsford, flushing deeply.

The girl nodded.

"The Union soldier who escaped from prison——" she began.

"Is the man dead?" interrupted Arrelsford.

"The man is dead."

"It is a curious thing, Miss Varney," continued the other with cutting emphasis, "that one Yankee prisoner more or less should make so much difference to you, isn't it? They are dying down in Libby by the hundreds."

"At least they are not being killed in our houses, in our drawing-rooms, before our very eyes."

She confronted Arrelsford with a bitterly reproachful glance, before which his eyes for a moment fell, and he was glad indeed to turn to another orderly who had just entered the room.

"Have you kept track of him?" he asked in a low voice.

"He's coming down the street to the Department now, sir."

"Where has he been since he left Mrs. Varney's house?"

"He went to his quarters on Cary Street. We got in the next room and watched him thru a transom."

"What was he doing?"

Working on some papers or documents."

"Could you see them? Did you see what they were?"

"They looked like orders from the War Department sir."

"He is coming here with forged orders, I suppose."

"I don't doubt it, sir."

"I surmise that his game is to get control of these wires and then send out despatches to the front that will take away a battery or a brigade from some vital point, the vital point indicated by 'Plan 3.' That's where they mean to attack tonight."

"Looks like it, sir," agreed the orderly respectfully.

"'Plan 3,' that's where they will hit us," mused the Secret Service Agent, "is there a guard in the building?"

"Not inside, sir," answered the orderly, "there's a guard in front and sentries around the barracks over in the square."

"If I shouted, they could hear from this window, couldn't they?" asked Arrelsford.

"The guard in front could hear you, sir. But the time is getting short. He must be nearly here; you'd better look out, sir."

Edith Varney had heard enough of the conversation to understand that Thorne was coming. Of course, it would never do for him to see her there.

"Where am I to go?" she asked.

"Outside here on the balcony," said Arrelsford. "There is no closet in the room and it is the only place. I will be with you in a moment."

"But if he should come to the window?"

"We will step in at the other window. Stay, orderly, see if the window of the Commissary General's Office, the next room to the left, is open."

They waited while the orderly went out on the balcony and made his inspection.

"The window of the next room is open, sir," he reported.

"That's all I want of you. Report back to Corporal Matson. Tell him to get the body of the prisoner out of the Varney house. He knows where it's to go."

"Very well, sir."

"Mr. Foray," continued Arrelsford, "whoever comes here you are to keep on with your work, and don't give the slightest sign of my presence to anyone on any account. You understand?"

"Yes, sir," said Foray from the telegraph table in the center of the room.

He had caught something of the conversation, but he was too good a soldier to ask any questions, besides his business was with the telegraph, not with Mr. Arrelsford.

"Now, Miss Varney," said the Secret Service Agent, "this way, please."

He opened the middle window. The girl stepped thru, and he was about to follow when he caught sight of a messenger entering the room. Leaving the window, he retraced his steps.

"Where did you come from?" he said abruptly to the young man.

"War Department, sir."

"Carrying despatches?"

"Yes, sir."

"You know me, don't you?"

"I've seen you at the office, sir, and——"

"I'm here on Department business," said Arrelsford. "All you have to do is to keep quiet about it. Weren't you stopped in the hall?"

"Yes, sir; but I had a despatch from the President that had to be delivered to Lieutenant Foray."

"Well, it is just as well," said Arrelsford. Don't mention having seen me to anybody under any pretext and stay here. You might be needed. On second thoughts, Foray, let any messenger come in."

With that Mr. Arrelsford stepped out onto the balcony thru the window which he closed after him, and he and Edith disappeared from view.

"Messenger," said Foray, "step down the hall and tell the private there that by Mr. Arrelsford's orders, messengers are allowed to come up as they report."

The room which had been the scene of these various colloquies became silent save for the continuous clicking of the telegraph keys. Presently two messengers came back and took their positions as before.

Hard on their heels entered Captain Thorne. He was in uniform, of course, and a paper was tucked in his belt. He walked rapidly down the room, acknowledged the salutes of the messengers, and stopped before the table. His quick scrutiny of the room as he advanced had shown him that there was no one present except the messengers and Lieutenant Foray. Foray glanced up, nodded, finished taking the despatch which was on the wires at the time, wrote it out, put it in its envelope, and then rose to his feet and saluted.

"Captain Thorne," he said.

"Lieutenant Foray," replied Thorne, taking the order from his belt and handing it to the operator.

"Order from the Department?" asked Foray.

"I believe so," answered Thorne briefly.

Lieutenant Foray opened it and read it.

"They want me to take a cipher despatch over to the President's house," he said as he finished.

"Yes," said Thorne, moving to the vacant place at the table. He pulled the chair back a little, tossed his hat on the table, and otherwise made himself at home.

"I am ordered to stay here until you get back," he began casually, shoving the paper aside and stretching his hand toward the key.

"That's an odd thing, Captain," began Lieutenant Foray dubiously. "I understood that the President was meeting with the Cabinet. In fact, Lieutenant Allison went over there to take some code work a moment ago. He must have gone home, I reckon."

"Looks like it," said Thorne quietly. "If he is not at home you had better wait."

"Yes," said Foray, moving away, "I suppose I had better wait for him. You will have to look out for Allison's wire tho on the other table. He was called over to the Department."

"Oh, Allison!" said Thorne carelessly. "Be gone long, do you think?" he continued as he seated himself at the table and began to arrange the papers.

"Well, you know how it is. They generally whip around a while before they make up their minds what they want to do. I don't suppose they will trouble you much. It's as quiet as a church down the river. Good-night."

"See here, Mr. Foray, wait a moment. You had better not walk out and leave—no matter," continued Thorne, as the operator stopped and turned back. "It's none of my business, still if you want some good advice, that is a dangerous thing to do."

"What is it, Captain?" asked Foray, somewhat surprised.

"Leave a cigar lying around an office like that. Somebody might walk in any minute and take it away. I can't watch your cigars all day."

He picked up the cigar, and before Foray could prevent it, lighted it and began to smoke. Foray laughed.

"Help yourself, Captain, and if there is any trouble, you will find a revolver on the table."

"I see," said Thorne, "but what makes you think there is going to be trouble?"

"Oh, well there might be,"

"Been having a bad dream?" asked the Captain nonchalantly.

"No, but you never can tell. All sorts of things are liable to happen in an office like this, and——"

"That's right," said Thorne, puffing away at his cigar, "you can never tell. But see here. If you can never tell when you are going to have trouble you had better take that gun along with you. I have one of my own."

"Well," said the operator, "if you have one of your own, I might as well."

(To be continued.)

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Grange

This department is conducted by R. P. Kester, Lecturer of Pennsylvania State Grange. Notes, queries, comments and news of grange work are invited from readers. Obituary notes and news of purely local interest can not be used. Address all communications for this department to R. P. Kester, Grampian, Pa.

IMPORTANT CONFERENCE MEETING

On January 20th a conference called by State Master Creasy met in Harrisburg, Pa., and discussed vital questions bearing on the interests of agriculture and rural advancement. At this meeting were present representatives of the farmers, the bankers, the educators, the railroads and the consumers. The chief object of these meetings, of which this is the second, is to develop a better understanding and a closer acquaintance of the needs of each and of their inter-dependence. The sessions were most interesting and, while the discussions were very frank, a perfectly good spirit prevailed, and each learned of the other to mutual advantage. The meeting adjourned to meet at the call of the chairman, after a committee had been appointed to prepare by-laws for a permanent organization.

Storage.—One of the most suggestive addresses of the conference was that of F. R. Stevens, Agriculturist of the Lehigh Valley Railroad, on the subject of storage. He said: "Storage is the first factor in cutting out the non-essential in cost in transit from producer to consumer. Poduce shipments are limited by storers who control the situation. Storage facilities should be provided in producing centers, and produce shipped as needed. It can then be sorted, properly graded and put up in proper retail packages. The day is not yet when the farmer can do the retailing in the great cities. When storage is provided in the communities, and sorting done at the farm, the refuse can then be manufactured into denatured alcohol. One reason why farms are not paying a dividend today is because too much loss is occasioned by waste. The farm unit must be bigger, it must be the community. We must not do away with the individuality of the farmer, but they must get together on a common ground. In the New York State scheme of storage, the storage houses are owned by the farmers and the dividends are the increased profits. This will mean better and more pofitable farming."

Vocational Education was discussed by Prof. L. H. Dennis, Assistant Agricultural Expert of the Department of Education. His talk was instructive and encouraging to those who have long urged the need of giving some education as well as training along lines tended to increase knowledge and efficiency for life's work. If the legislature appropriates money sufficient, it is the purpose of the Department of Education to establish a few vocational high schools thruout the state, the number to be increased as funds, opportunity and equipment are available.

The woman's viewpoint on these subjects was ably presented by Dr. Hannah McK. Lyons, Ceres of Pennsylvania State Grange, and by Mrs. Patterson, Past Ceres of the National Grange. The latter said that there need be nothing necessarily added to the curriculum of the ungraded country schools, but that the studies we now have need to be vitalized by making the subject matter bear upon farm and home life.

Rural Credit.—This subject was discussed from the bankers' viewpoint by Mr. Stubbs, a banker from Chester County. He stated that there was no need to subsidize the farmer; he would not accept it if offered. The bankers are awakening to their responsibilities to the farmer. The farmers' viewpoint was given by James G. McSparran, of Lancaster County. Among other things, he said that "great crops are not so important to those who are engaged in agriculture as they are to all other branches of business, yet the banks have not given the farmer the same opportunity they have given to many other lines of business. If it is not remedied, the farmers have the ability and the money to establish their own banking system.

J. T. Ailman, Secretary of Pennsylvania State Grange, in discussing "What the Grange Can Do," commended the earnest interest shown by the speakers from the different callings, but called attention to the fact that the grange had been working for 45 years along the identical lines which many now think are modern movements, and that it has been due to the tireless work of many members of this order that interest has been aroused and the endeavors made popular. While the grange is not jealous of the activity of all interested parties, but welcomes their aid, yet credit must be given to the order whose efforts have succeeded in awakening the public conscience to the needs of the farmer and agriculture in general.

McSPARRAN'S GRANGE NOTES

Our Banking System

There is now going on in Washington an investigation which will no doubt be the basis of legislation so general in its scope as to reach every family in the United States. One thing that stands out very prominent in the published reports of the investigation, is that during the last generation a tremendous centralization of money and credit control has taken place. There is little doubt that in many cases this credit control has been selfishly used for the accomplishment of monopoly thru withdrawing credit from the weaker operator in a given line. But in the consideration of the subject of the kind of legislation that should be enacted as a result of the information acquired, it is not necessarily important to know whether or not centralized power has been used for evil purposes, except insofar as it proves the actual centralization and thereby proves the possibility of doing harm in the future. It is not a question so much whether a power acquired from former legislation has been used for the detriment of the government and against the welfare of the people, but rather whether it was intended to confer the power at all; or, even if the particular law was so manipulated as to give a certain advantage, was that advantage conferred by the people or acquired by special privilege in defiance of the people?

The fact is that our monetary system has gotten away from the government and into the hands of private interests. In 1907 we suffered the humiliation of seeing this great government of ours bow the knee to the power of Wall Street, when a great financier loaned the government its own money at a good interest to stop a panic which seems to have been brought on by the same power that stopped it. Had we been so fortunate as to have had officials at that time who were really progressive and always awake to the welfare of the people, the chances are that we would have had an investigation started then that would have stopped the panic and have laid the foundation for constructive legislation to prevent the recurrence of such a humiliating circumstance. It is to be hoped that the committee now doing this work will look upon it from the standpoint of the whole people, and not allow either a narrow view of the subject or any political reason to prevent them from putting the control of our monetary system where it certainly belongs, in the hands of the federal government. It may be, and doubtless is, the fact that the government under present law has a larger authority than has been exercised and that if the present law were properly enforced the manipulation of our monetary and credit systems would very largely be used in the people's interest.

There are two changes that ought to be made in our banking law, and should long since have been a part of it. The first is that the evidence of actual ownership of property should be taken as security for a loan at a national bank. A person may own a $10,000 property and yet, if he wishes to borrow $1,000, he must get an endorser. Of course, in many cases it is a formality, yet it is wrong in principle and should be changed so that real value would be considered the best security for the borrowing of money. The other change required is that some method should be found to positively guarantee the depositor against loss. As grangers, we have always advocated the principle of insurance, fire insurance and life insurance, and when a bank takes a person's money as a deposit for the purpose of making money from that deposit, it should be made as safe as the government itself. If it were simply an accommodation, it would be different, but the purpose of receiving the deposit it to make money from it, and therefore the banks should be compelled to provide a fund from which to guarantee the payment of depositors in case of a bank failure.

There is no doubt that this question of money and credit is a big one and quite complex, but for that very reason it is the more necessary that the people be alive to the situation and see to it that those safeguards be enacted into law as will protect the best interests of the people by preventing centralization of both money and credit control.—John A. McSparran.

THE KEYSTONE EXCHANGE

The Pennsylvania State Grange has organized a co-operative buying and selling agency, to be known as the Keystone Grange Exchange. The association is incorporated under the laws of the State of Pennsylvania, and is capitalized at $100,000, one-half of which is common stock, having a par value of $2 per share, and one-half is preferred stock, having a par value of $25 per share.

The voting power is vested in the common stock, and will only be sold to subordinate and Pomona granges and the State Gange, thus keeping the control of the organization wholly within tho Order. Any grange becoming a shareholder in the Exchange, the in- all of the members of that grange to participate in all of the benefits derived from membership therein. Should a grange neglect or refuse to became a shareholder in the Exchange, the individual members thereof may become members by purchasing one or more shares of the preferred stock, and receive all of the benefits except that of voting.

The management of the Exchange is vested in a board of seven directors, consisting of the Master and Secretary of the State Grange and five elective members, elected by the delegates representing granges belonging to the Exchange. The object of the Exchange is to assist the farmer in marketing his products and in buying that which he needs in his farm operations, such as feed, seeds, lime, fertilizer and machinery.

The report of the National Secretary of Agriculture shows that the farmer gets but 30 cents out of what costs the consumer $1. This is an injustice both to the farmer and to the consumer, and can only be remedied by a more economical system of distribution, which is exactly what the Exchange proposes to effect. It is not the "middleman," but the multiplicity of "middlemen" that makes the present system of distributing farm products both expensive and intolerable.

A system of crop reporting will be established that will enable us to know where there is a surplus and where a shortage in farm crops. This will, in a measure, enable us to supply the needs of the market, thus preventing a glut. It will also enable the farmer to sell at a time and at a place where the best prices prevail.

The purchase of farm machinery at a reasonable price will be one of the big items of saving for the farmer, and is one of the problems that will be hardest to solve. The Exchange will introduce a new method of handling farm machinery that will not only eliminate a lot of useless and expensive agents, but greatly reduce taxes, freight, cartage, storage and insurance. With these items of expense reduced or eliminated, we will be able to sell farmers machinery at a price in keeping with the first cost of the machine.

These are a few of the problems which the Exchange will eventually solve. It means a fight, but we are fully prepared to meet the enemy. The great corporate interests, which have been established under the law of "Special Privilege," are mainly powerful because the farmers' money is constantly being deposited in their well-filled treasuries. If that is withheld, their power decreases proportionately and the farmer will then have an even chance in the world of business.—E. B. Dorsett, Manager.

GRANGE NOTES AND NEWS

Maine Membership.—At the recent meeting of the Maine State Grange, 57,765 members were reported in 449 granges. Houlton Grange still has the largest number of members, namely, 1,068. The cash receipts for the year of the state grange were $11,557.23.

Secretary of Agriculture Candidates.—Patrons have their eyes on President-elect Wilson these days to see how nearly he complies with their wishes in the selection of a Secretary of Agriculture. There seem to be three names prominently mentioned, either of which would give them no cause for complaint. They are Dean L. H. Bailey, of New York; Pres. H. J. Waters, of Kansas, and Senator Obadiah Gardner, of Maine. Another name mentioned, which surely makes a good fourth, is Hon. W. T. Creasy, of Pennsylvania. Fact is, the "woods are full of 'em," when you come to look over the list of names the grange, in one state or another, has to offer.

Veterinary

(Conducted by W. C. Fair, V. S.)

(Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also name and address of writer. Initials only will be published. When reply by mail is requested, it becomes private practice, and a fee of $1 must accompany the letter. This is one of the most valuable columns of the paper and we invite readers to make use of it. Clippings from this column, when properly preserved and classified, would make one of the most valuable medical symposiums a farmer-stockman could obtain.)

Indigestion—Uneven Molar Teeth.—I have a horse that I have been trying to fatten, but have failed. He is fed cracked corn and bran, three quarts corn and one of bran at a meal, three times a day. I usually salt him three times a week, but he remains thin. J. W. M., Swedesboro, N. J.—It is possible that floating his grinder teeth might be all that is required, for he may be only partially digesting his feed, on account of it being improperly masticated. Give ½ oz. fluid extract gentian, ½ oz. Fowler's solution and 1 dram fluid extract nux vomica at a dose in feed, three times daily. A change of feed is perhaps one of the things you should do.

Sore Knee.—My 16-year-old fast pacing mare shows a little lameness in knee when first taken out of stable, but the joint is not inflamed or enlarged. This is a valuable mare, and I am anxious to have her cured. W. D., High Bridge, N. J.—If you will give her 60 days' rest and apply 1 part iodine and 10 parts lard to knee three or four times a week she will recover. Kindly understand what I mean by rest is absolute quite; she should not be driven, or allowed to run out.

Collar Boils.—I have a 5-year-old horse that has been troubled for the past six months with boils on shoulder His coat is rough, and he does not gain in flesh as rapidly as he should. Lately I have noticed him pass a few long, white worms. Have fed him some stock molasses lately, but they do not help him, neither has the condition powder I gave him. V. H. F., Nelsor, Pa.—If there are any small, hard bunches between skin and muscles of shoulder, they should be cut out, for they will never go away, and drugs will not absorb such tumors. Give him ½ oz. Donovan's solution at a dose in feed, two or three times a day.

Knee-Sprung.—I have a 2-year-old colt that is a little over on his knees and I have been thinking about having him treated, but he is not any worse than he was when only a few months old. J. C. K., Meadville, Pa.—I fully believe this a case that treatment would avail but little, and if I owned him would leave him alone. If left alone he may straighten up some, without treatment.

Curb.—Have a yearling colt that has a fullness on back part of left hock joint, and if this bunch could be taken off he would sell much quicker and for $30 more than with it on him, for this bunch is easily noticed. He is not lame. O. B., Scranton, Pa.—Apply 1 part red iodide mercury and 6 parts fresh lard to enlargement, once a week, and it will slowly reduce bunch. I might say that persistent treatment is necessary to make much of an impression on such a bunch.

Wart on Teat.—One of by best cows has a wart on teat which interferes with milking and I would like to know what can be done for her. This wart bleeds whenever cow is milked. J. E. L., Jamestown, N. Y.—Cut it off; they are only skin deep. In applying caustic to take them off the medicine is likely to spread over healthy parts and make the skin sore. Apply boracic acid to wound twice a day.

Warbles.—Two of my cows have small hard bunches on back, but both cows are in good health. These nubs are not raw and not painful. A. W., Latrobe, Pa.—Paint the bunches with tincture of iodine, three times a week, and you may succeed in killing grubs.

Pigs Have Mange.—I have 4 shoats that will each weigh 90 pounds, which have a scurvy condition of skin, but skin is not much sore. Skin is dry and harsh. The shoats rub a little, indicating itch. W. J. W., Elmira, N. Y.—Apply 1 part oxide of zince and 5 parts vaseline to sore parts of skin, once a day. If they are not kind and gentle, you had better apply ointment at night, when the pigs are asleep and quiet.

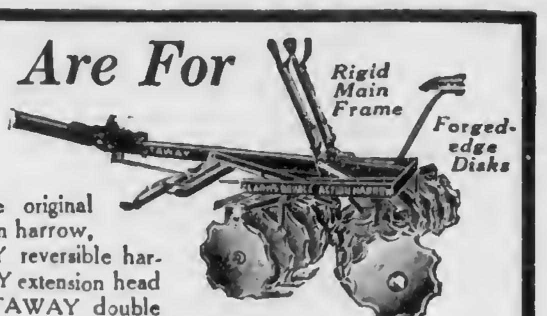
Sheep Ticks.—My sheep seem to have more than their share of ticks, and I am anxious to rid them of these pests. H. F. A., Brocton, N. Y.—You had better dip them, using any of the regular sheep dips that are regularly advertised in this paper. If you do not care to dip them, cast sheep, roll it on back and then pour dip on center of belly, and it will pretty thoroly cover body. By following this method you may fail to kill them all.

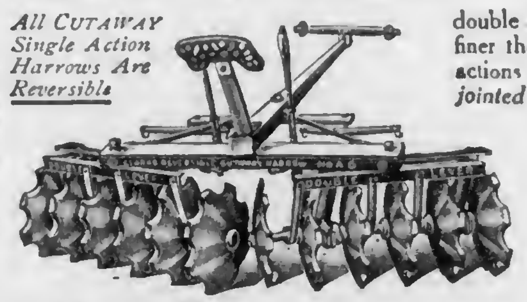
Scaly Legs.—I have several chickens that have sore legs. The disease, if it is one, commenced between the toes, then climbed up legs and is all over legs now. A. W., Sharon, Pa.—Apply soft soap to soften scales, then wash off with hot water, scrape off scales; then apply 1 part coal tar disinfectant and 10 parts vaseline, daily.

SOIL SURVEY OF JOHNSTOWN AREA

The Soil Survey Report of the Johnstown area, Pennsylvania, has been issued by the Department of Agriculture. The territory surveyed lies in Cambria, Blair and Bedford counties, covering an area of 714 square miles. The report deals exhaustingly with the agricultural development and possibilities of the section surveyed, and contains interesting recommendations as to how agricultural conditions could be improved in order that the best possible yield per acre could be obtained. The report is accompanied by a map in colors, showing the locations of the many different types of soils discovered during the survey, as well as the location of everything of agricultural interest to the three counties.

Transportation facilities to markets are of the best, states the report, and good roads prevail. The soils of the area surveyed are capable of producing good general farm and trucking crops. More attention should be paid to the maintenance of humus in the soils to aid in the conservation of soil moisture, prevent leaching, and increase crop yields, advises the report. Systematic forestry is recommended on the non-agricultural lands, which are of considerable extent in the area.





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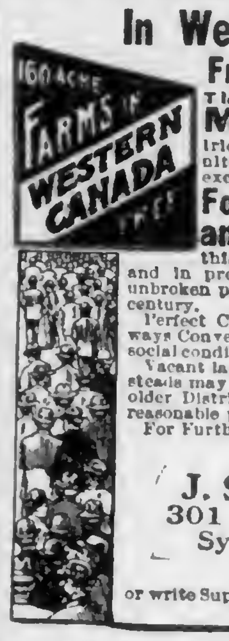

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PENNSYLVANIA FARMER
AGRICULTURE THE KEYSTONE OF NATIONAL PROSPERITY
ESTABLISHED 1880
PUBLISHED WEEKLY
VOL. 33.—No. 6. PHILADELPHIA, PA., SATURDAY, FEBRUARY 8, 1913. 50 CENTS A YEAR.

The Efficiency of Tile Drainage

T. E. Martin,
Co., N. Y.

As a general proposition, tile drainage benefits all types of soil. A drain system should be adapted to the land, and not the land to the system. On certain limited and specially favored areas Nature has provided natural drainage. To artificially drain these would be a waste of time and money; but such areas are a rarity and conspicuous for their absence. Another class of lands need only partial drainage, such as a line of tile thru the valleys and wet places. Then another class of lands demand thoro and systematic drainage. The prevailing opinion among farmers, the land over, seems to be that only the low bottom lands require complete drainage.

The annual storm water averages about 39 inches, and falls equally on the upland and lowland alike. Uplands are underlaid, more or less, with an undulating hardpan subsoil. The surplus water passes down thru the top soil to the hardpan surface, thence it flows along on top of the hardpan subsoil toward the point of least resistance, from one level to a lower one, and usually on to the lowland, which is already saturated. Owing to the undulating nature of the subsoil, ridges of it often crop out or come close to the surface, and at such places the surplus water is damed. It therefore backs up, forming a miniature underground lake, which has its outlet at the lowest point over the hardpan ridge. At such points wet and spring places form. In order to remove such an evil a drain should be cut thru the ridge and into the source of the evil. Often on sloping land there are as many positions of the contour water as there are summits of hardpan. On hillsides and along the base of hills wet places are present. Seepage water may come from these or adjacent land higher up, and for such conditions a single line of tile often satisfactorily solves the problem for all time. Such a drain is classed an intercepting drain, and should be located along the lower side of the wet land, and so placed as to length, depth and grade that all the seepage water will enter the drain from the upper side rapidly and away to the outlet.

For soils requiring systematic drainage, the parallel system is the best. For full efficiency drains should run straight up and down the slope, and take water equally from either side, thereby develop full 100 percent efficiency. If drains are placed diagonally up and down the slope, they take water principally from the upper side only, are intercepting drains, and develop but 50 percent efficiency, where 100 percent is possible. In this day and age of sharp competition, farmers should invest money so 100 percent is returned, instead of half that. Moreover, with drains running diagonal to the slope the surplus water may be taken in on the upper side, and lower down the tile line, in gravelly places, this same water will pass out of the line on lower side, and thereby create a new evil.

Distance apart for drains, depth, size and grade are local and individual problems. For instance, for fruit culture and intensive gardening or farming, the drains should be closer together and on a more elaborate scale. While for general farming, the drains should be farther apart. Drains of good length and depth, and so placed that the drainage reaches laterally from drain to drain, is the object and problem to solve.

How deep and far apart to place the drains should be determined by the character of the soil and system of farming now practiced and likely to be followed later. For clays and tight soils lateral drains should be not less than four-inch tile and from 30 to 50 feet apart and 2½ to 3 feet deep. For gravelly, open soils, lateral drains may be placed 60 to 100 feet apart and 3 to 4½ feet deep. Nature often limits the depth and grade. The lighter the grade, the more care should be exercised in the distribution of the fall. Twelve inches fall in 100 feet (1 percent grade) is considered a heavy grade. One-inch fall in 100 feet will give good results, but more fall, of course, is better. There are miles of tile drains in the United States laid on a .0004 1-6 grade, or only ½ inch fall in 100 feet. Occasionally the fall can be increased by doing some missionary work on an adjoining farm. The writer has 3,900 feet of such. Mains, as a rule, should be placed 2-3 their diameter below lateral grades to allow for clearance and prevent back water up the lateral when main is running part full.

Undoubtedly glazed or vitrified round tile are the best, as the cylindrical is an accepted form of strength and service. Drain outlets should be established in concrete and screened to prevent animals from entering. All branches, preferably 45 degree ones, should be put in the main when it is laid, for future laterals and sub-mains. Forty-five degree bends and curve tile are very satisfactory for angles in a drain. Four-inch tile are rapidly growing in favor, and many farmers use nothing smaller. An 8 to 10-inch main is usually ample for a 50-acre area. The storm water run-off, watershed and soil should determine the proper size. Better err on the side of too large rathen than too small. Some soils need aeration as much as others require drainage, and 4-inch tile are more effective for this than 3-inch.

If consistent with the area to be drained, it is well to lay out the drain system parallel with some one of the farm sides. Stake out the mains and laterals accordingly, and accurately measure all distances, angles, curves and so on, and record it. After staking out such part of drain system as will be opened, a three-horse team and common turning plow will be found useful and economical by opening a dead furrow over the drain line. Next turn a back furrow in the dead furrow, shovel it out, replow and reshovel, and lengthen plow hitch with a chain. By opening lateral drains in pairs, that is, two parallel drains, and placing the subsoil of one lateral drain on the left bank and the subsoil of the other lateral drain on the right bank, time can be saved when plowing in by going up one drain and down the other.

For hand work the following hand tools will be found valuable: D-handle 18-inch round-point drain spades, long handled 7-inch round-point shovels, pickaxes, sledge hammer, crowbar and one 4-inch tile scoop, push and pull. This latter tool cuts a half-round straight groove for tile to lay in. It is an excellent tool, and will cut the groove accurately.

Join the tile end to end, close, in a straight line. Turn them until a good joint is secured. If tile do not fit closely, the openings should be on the under side. Back drive the tile with the heel, and with flat stones tightly block branch inlets and lateral ends. Always block up the tile line whenever work stops, and keep crooked tile for curves, and hard, firm soil. Quicksands should be drained during dry seasons. Cover tile joints with burlap bagging, cut in strips 3 inch by 8 inch. Prime the tile with top soil and tamp down by walking.

Cost of drainage depends entirely on cost of tile, character of soil, depth and efficiency of men and machinery. If all hand work, the cost will range from a total cost of 3½ to 8 cents per foot. Horses

AGRICULTURAL BUILDINGS AT THE CORNELL UNIVERSITY, WHERE FARMERS' WEEK WILL BE HELD FEB. 10-15, 1913.

and plows will reduce it about 25 percent. With laterals 60 feet apart, 726 lineal feet are required to drain one acre. Dr. Ralph B. Reitz has installed a complete drain system, 11 1-5 miles, with tile 4 to 8 inches, using a 6-horse machine, at an average gross cost of approximately 65 cents per rod; sixty-five acres and drains 45 feet apart.

Drainage is a primary and permanent improvement. A wet soil is fundamentally wrong, and is as unfit for work as a man full of something stronger. Maximum crops are impossible on wet land. For drainage of wet lands, money hired at 6 percent is a safe and sound investment. Tillage machinery and fertilizers are valuable and necessary assets, but should be secondary and subservient to drainage on a wet farm. The growing of maximum crops on land that formerly produced minimum crops is the best testimony for drainage. The writer had 57.85 acres of such land in 1892. Ten miles of drainage has been completed, costing $2,500. In 1906, 18 acres of potatoes averaged 417 bushels per acre; 1912, 16 acres averaged 385 bushels per acre. Last year our new seeding, 18 acres alfalfa and clover, was ideal in stand and size.

POTATO CULTURE

By E. A. Rogers, Cumberland Co., Me.

The matter of seed potatoes is ofttimes a serious one to the grower in those sections where it seems necessary to purchase new seed every year or at the best every two years. There are many sections of Eastern Pennsylvania where, if the right kind of Northern seed is brought in, the tubers grown from this seed will give even better crop results the next year than the original seed. It seems to take one year to get acclimated, and the second year's crop will often be much the nicer and smoother of the two. While this is true of the second year's crop, as far as my knowledge goes, it seldom applies to the third crop. Now any method which will save the farmers of New Jersey, Eastern Pennsylvania and Delaware from the uncertainty of getting unreliable seed must be a great saving to them. If they can save a part of their own seed and have it do equally as well for one year as seed brought from the North, they will be only obliged to get enough northern-grown seed each year to grow what they will need to plant the next. If, in doing this, they get a variety which will not grow well in their particular locality, their loss is but little to what it would have been if all northern seed had been purchased and proved of the wrong variety. For a farmer to buy seed for 20 to 30 acres when the price is high, only to find out later on that he has had a variety sold to him that will not grow in his section is a serious matter. Were it not for the fact that it would make this article too long, I should take up the matter of neighborhood storehouses, built with the potato bins underground, where seed could be kept without sprouting until wanted for planting and at a small cost to each individual grower. When this is done, at least part of the troubles of those who buy northern-grown seed will be a thing of the past. The Rurals, or what is known as "blue stems," will not grow in many sections of New Jersey, while in some parts of eastern Pennsylvania they will do finely. The old Green Mountain will scab so badly in certain sections that it is of but little use, where the Norcross will grow smooth and nice. I cite these cases to show how important it is that the grower should know just what he wants for seed in his locality, and when and how to get and keep them to have them do their best for the longest period of time.

The handling of the seed tubers after they are in the planter's hands is many times of greater importance than the variety itself. I have seen very many cases, right here in Maine, where the planter had the very best of seed and yet, by not understanding the preparation of it, failed to grow even a fair crop, sometimes not over one-third of the seed pieces making a good, strong, vigorous stalk, and not a half crop of tubers per acre as a result. This is apt to be more pronounced in the North than in the latitude of Philadelphia.

Now then, a grower who has good, strong, vigorous seed of a variety that will do finely in his section, and puts it in the best of condition before planting, will get a fine paying crop in most any season.

While it is very important that potatoes intended for seed purposes should be kept in a cool place, so that no sprouting will take place, thereby resulting in loss of vitality, potatoes in this condition are not fit to plant until they have been warmed up. In fact, in the mere cutting of these cold, hard tubers much injury can be and is most generally done. Many will use a knife with a blade much too thick on the back which, passing thru the hard tuber, will crack the tissue for some little distance on each side of the cut. This is not apparent to the eye when first done, but if the seed is cut fine, one can readily see that a great deal of injury would result. In cutting potatoes for seed, the knife should be as thin as possible and yet hold its edge to do the work, since the amount of seed that can be cut per day by each man is largely increased and will not be injured by broken tubers. This, however, is very much less when the tubers have been exposed to light and sun. To take tubers that are cold and hard, with but little sign of the eyes starting, cut and plant them is to take long chances on failure, especially in the North, where the ground is apt to be cold also. The germs of decay will get to work on the cut surface of the seed pieces quicker than the germ of life in the eyes, resulting in many pieces wholly decaying before the sprout reaches the surface, and in many others the sprout will break ground but it will be so weak and spindling that as a tuber producer it is a failure. This is more true of the eyes towards the stem end of the seed tubers, since they generally start much slower than the one or two eyes on the seed ends.

Potatoes that are cold and hard should be brought into warmth and light from 10 days to two weeks before being cut and planted. The eyes should get just well enough started so that the sprouts can be plainly seen, but not enough so that they will be broken off in the handling necessary in planting. Potatoes shipped from the North in the spring as far south as New Jersey or eastern Pennsylvania must, of necessity, get more or less warmed up and in better condition to plant than they were when first taken from the northern cellar or storehouse.

With the steady spread of potato disease, no one who is buying new seed should think of planting it without soaking it in a solution of formaldehyde—one pint of the 40 percent solution of formalin to 30 gallons of water. Soaking the seed tubers for two hours will kill the spores of the scab and any other disease spores that may cling to the surface. The worst diseases the grower has to control will usually live over the winter in the tissues of the seed tubers themselves, and can not be killed by surface soaking. But the getting of the outside of the tubers free of all disease spores is the first step. When the tubers are cut each man cutting should have two knives, and when a tuber is cut into which shows any discoloration of any sort, it should be thrown away and the knife disinfected before cutting another tuber. The writer uses a pint glass preserving jar for each man cutting, in which he makes a strong solution of formaldehyde. When a doubtful tuber is cut into, the blade of the knife is dipped into the glass jar and left; the second knife being used until another diseased or doubtful tuber is cut into, when that is dipped into the jar and the first knife used again. While some diseased tubers will get by, even with this caution, I am convinced, from my own experience, that if this practice was general that the most of the diseases we now have to contend with would disappear. The cost of this method is but a trifle above the actual cost of the diseased tubers thrown away, and as a diseased tuber is usually no good itself as a producer, and is actually a menace to those not diseased, one had far better throw them away in the beginning, even if they have cost good money. If the cover is kept on the glass jars when not needed to disinfect the knives, one mixing of a solution will hold its strength for several days, especially if the rubber band is on the jar so that it will be air-tight. One deciding to soak his seed tubers should do it before the eyes start, as the formalin will kill all sprouts that are started, and it will generally take about two weeks for the eyes to start again. When the writer finds his seed tubers starting in the cellar they are taken out and soaked in the formalin for two hours, then left in the bags for three or four days to partly green and warm up before being spread right out in the sun on the grass ground, not over one deep. They can be spread right from the cellar, but if they are very hard and cold, the change to the direct hot rays of the sun is too extreme for best results. Spread out in this manner where there is a good turf but little grass, and raked over every week or 10 days to keep the sprouts from the eyes on the under side from taking root, they will keep longer in a good condition for planting than in any other manner. I have kept them here in the climate of southern Maine until frosted in October in as fine condition for planting as they were in early June. Some claim that the direct rays of the sun will kill the spores of the scab and other diseases that are on the surface of the tubers, and I am inclined to think this claim is well founded.

When cutting, the seed should be well dusted either with land plaster or sulfur, getting all the cut surface well covered. The writer prefers sulfur, as it has a tendency to keep worms and insects away from the seed pieces after they are planted, and again, under certain conditions of soil, a little sulfur will increase the yield of tubers. To sum up, those who are obliged to buy new seed every year can, by not handling it in the proper manner, spoil all their chances of a good crop, no matter how good it might be. On the other hand, one getting seed of comparatively low vitality can, by proper attention, get all the good out of it, and get a better and more paying crop than his neighbor who had far better seed stock to start with but failed to properly fit it before planting. There are so many little ways in which the potato crop can be increased, each one looking so trivial to the average grower that he pays no attention to it, yet if all were taken advantage of, which they can be by every grower without much if any more cost to him, there would be but a comparatively few cases where the grower would not raise a paying crop. I have tried to bring out a few of these in these three articles for the Pennsylvania Farmer.

WITH THE INSTITUTE MEN

Lackawanna County

Inclement weather during some of the Lackawanna County institutes held down the attendance at these places, but otherwise the sessions were well attended and very interesting. The farmers of this county, being in the heart of the anthracite coal regions, are surrounded with the best markets in the country. There is a great demand for farm produce in this region and the prices are usually very good. This condition of affairs has caused the farmers to strive to secure a maximum amount of produce, regardless of quality. The result is that we find the different lines of farming and gardening are carried on to their utmost capacity. The farmers are very prosperous, their crops are bountiful, as they are able to secure large quantities of manure for the price of hauling it; thereby greatly increasing the fertility of their farms, which are rapidly rising in value. Even tho these farmers are becoming wealthy thru the production of, in many cases, an inferior quality of produce, it appears that for men who would be willing to confine their energies so as to produce milk, poultry, fruit and vegetables of the very highest quality, to supply the fancy class of trade, there are exceptional opportunities. Quite a number of the farmers are awakening to these possibilities and turning their energies in that direction. This has been the main goal toward which the institute workers have been striving, not only to have these people produce greater amounts of produce, but to increase the quality of that produced, and we have every reason to believe that the work has not been in vain.—Sheldon W. Funk.

Clinton County

Three institutes have been held in Clinton County. The instructors have been L. W. Lighty, Fred W. Card and W. M. Patton. The sessions were of two days' duration, there being two night sessions in each instance. The attendance was large in each instance, considering the very unusual weather, and intense interest was manifested at every session: especially was this conspicuous at the educational meetings. In this county, with a total of only about 200 schools, they have 14 fully equipped high schools. In, and adjacent to Woolrich, they have some very rich bottom lands. Here the past season the state maintained an experimental plot, upon which they made extensive experiments in tobacco growing, the soil conditions being very favorable. So successful did it prove that arrangements have been matured for a continuation of the work next season, with every promise of ultimate success. In this neighborhood they have much rough land, which seems equally well adapted to fruit, and large areas are being planted, chiefly to apples, for which there is a ready and rapidly-growing market in the city of Lock Haven.

At Salona the country is more rugged, and yet they have some beautiful narrow valleys, with gradually receding slopes, well suited to alfalfa and fruit growing. At this place they have limestone soil, there being inexhaustible deposits of a very high grade of carbonated lime, which as yet has been used only sparingly. There is situated here a crusher, having a large trade in the crushed rock for ballasting and road building purposes. They have as yet not commenced to pulverize it for agricultural uses, but had ready ears for the advantages of its use in this form. They do maintain a small kiln for burning and preparing the caustic article and I was told by the owner that with his present equipment he was entirely unable to meet the farmers' demands.

Stretching from here out thru to Beech Creek is a section of beautiful farm land, in the center of which is Millhall, at which point is a large condensary, offering a market for milk, and as a consequence the people of this neighborhood are largely engaged in dairying and the raising of such foods as will afford grain and roughage for their herds. Silos are plentiful, some individuals having three or four, hence much corn and hay are found in their rotation. They are much interested in dairy and soil problems. The condensory pays four cents per quart for milk, and has its own wagons to do the collecting. This price is not based upon the butter fat content, hence there are many breeds of the dairy cow, the chief object being to keep a herd which will produce the greatest quantity of milk. The growing of leguminous crops, the maintenance of soil fertility and the development of orchard plots are of much interest to these people.

At Beech Creek the conditions are much similar to those found at Salona, with the addition that here they have an acute interest in potato raising. A disadvantage which these sturdy farmers have is the scarcity of soft coal and the entire absence of natural gas. The power which these would produce in manufacturing lines is accomplished in the free use of wood as a fuel. These good people are of sturdy parentage, intensely earnest in their purposes, and are working out their own problems with such clearness that I predict for them, in the near future, such a condition as shall bring larger and more remunerative returns, which, added to their strict ideas of every-day practices, will establish the county in an honorable place in its varied agricultural resources.—W. M. P.

AVAILABILITY OF NITROGEN FROM LEGUMES

"Is all the nitrogen obtained by the legumes available at once, or the following year, or but partially so? If in part only, about what proportion? Is the remainder liable to leach away before it can be assimilated? I have understood that, for instance, soy beans are likely to lose the nitrogen gathered by them before the next season, so that unless a cover crop is sown the same autumn they are gathered, only a part of their nitrogen is likely to be of use. Is this true or a mistake?—G. S., Dover, Del."

Apparently a considerable portion of the nitrogen left in the soil by the growing of cowpeas and soy beans is available at once. We have no experimental data at hand which would give us any idea of the exact proportion of nitrogen that is ready for use at once. A vigorous growth of wheat immediately following a crop of cow peas indicates that a certain quantity of nitrogen is being used by the wheat plant. The experience of farmers on the sandy loam soils of Delaware is to the effect that cowpeas do not greatly benefit the following corn crop, but they do find that wheat which immediately follows cowpeas is greatly stimulated.

It is true that soy beans and cowpeas should be followed by some catch crop to take up the available nitrogen which would otherwise be leached away in the open sandy soils during our mild winters. Where wheat, winter oats, or winter barley follow cowpeas no catch crop is necessary. If the cowpeas or soy beans are removed too late to sow with vetch or crimson clover, rye should be substituted, as it will make some growth, even when sown very late. It should be the practice of the farmer on sandy loam soils to keep the land covered by a growing crop during the winter.—Prof. A. E. Grantham, Delaware Experiment Station.

NEW YORK STATE AGRICULTURAL MEETING

Farm finance and co-operation were the general themes of the papers and addresses at the 73d annual meeting of the New York State Agricultural Society at Albany last week. While all recognize the need of improvement of existing conditions on the farm, in tansportation and in distribution, there is an uncertainty of feeling about the whole subject, no one seems to have a definite idea as to what is the right thing to do or suggest. President Sisson well said in his annual address that there is no doubt that lack of capital and excessive interest rates have interfered with the agricultural development of the country, and that if our farmers had been given a little financial education along with instruction in mere crop growing, and had been taught how to secure and to use credit, it would have stimulated to associated action, given them a commercial instinct and by aiding co-operation in every way, would have enabled them to become their own merchants. In the lack of such education, the average farmer finds it difficult to appropriate and assimilate these new ideas about foreign credit systems, and he has got to be "shown" by results that they are adapted to his present needs.

It is stated by the President of the United States that while our twelve million farmers are producing each year no less than eight or nine billion dollars' worth of crops of all sorts, they are doing this on a borrowed capital of over six billion dollars, on which sum they pay interest charges of over $500,000,000, and counting commissions and renewal charges, the interest rate paid by farmers averages 8.5 percent. In other words, the farmers of the United States are paying a penalty annually of $270,000,000 in interest more than farmers of foreign countries are on the same amount of borrowed money. It would seem that these facts alone would awaken our American farmers to the necessity of taking some measures to prevent this largely preventable loss.

As an evidence of co-operative effort and the imperative need of some system of sound finance to aid the farmer, one speaker, Hon. Harvie Jordan, of Atlanta, Ga., cited the cotton crops of 1910 and 1911. The crop of 1910 amounted to 11,500,000 bales, which sold in the market for $963,000,000, while the crop of 1911 of nearly 16,000,000 bales, sold for only $860,000,000. A crop 35 percent larger is sold for 10 percent less. This loss to the cotton growers of $425,000,000, when they should have received practically the same price per pound for their cotton, was evidence to the speaker that there was a great need in the South for some system of co-operation and farm finances not known there.

The real difficulty at present with the successful working out of co-operative plans of one kind and another was pointed out by the Hon. Seth Low, of New York, when he said that it is hard for our farmers to learn how to co-operate, for we come of an ancestry whose great merit it was that each one could stand on his own feet. Independence is bred in us.

ROGERS' POTATO ARTICLES

The last article in the series on Potatoes in Pennsylvania, by Mr. E. A. Rogers, is published in this issue. The many letters and comments we have had on this series testify to the value and adaptability of these articles to Pennsylvania conditions. We suggest that readers save these three articles for future use. Readers will also be interested in knowing that Mr. Rogers has just published a book on potato culture, which discusses his methods in detail. We consider it one of the most valuable books on the subject that has even been published. A small advertisement of the book, giving price and other details, will be found elsewhere in this issue.

Farm the Hills Too

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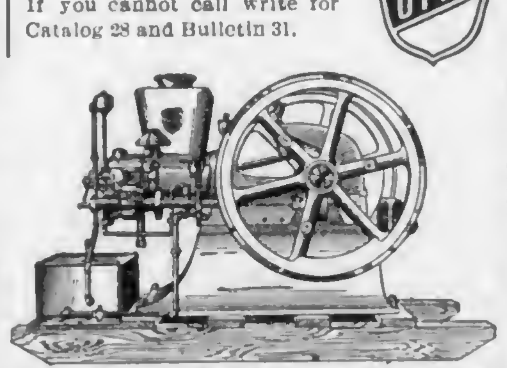

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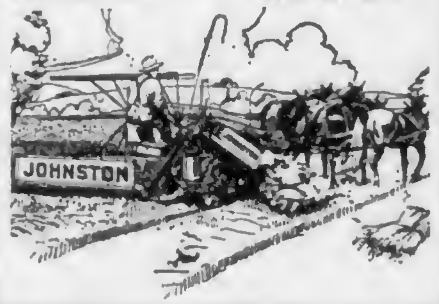

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Horticulture

THE PENNSYLVANIA HORTICULTURAL MEETING

The Pennsylvania Horticultural Association grows stronger as it grows older. Its annual meeting in Harrisburg, held January 21 to 23, was, perhaps, one of the most largely attended, interesting and discursive in the Association's history. It is thought by many members of the different state organizations that holding joint annual meetings of the agricultural associations is not satisfactory to the members, as many are members of two or more of the organizations, and as there are three or four sessions of the different bodies running at the one time, plenty of good things are missed by the physical limitations of a body not being able to be in more than one place at one time.

The meetings could not all be held in one building, while the splendid exhibits of apples, corn, dairy products, nursery stock, machinery, etc., had to be housed in even another building. But farmers are good natured, and it is supposed that what they lost by not being able to attend the various able discussions of the scattered meetings, they found compensation for in the exercise they secured in walking around.

President W. T. Creasy, in his opening address, gave a short review of the business of growing and marketing fruit in the state, and sounded a note of warning against the apple-planting craze that appears to be epidemic all over the United States. It was not his desire to discourage legitimate fruit growing, as embarked in and to be carried on by those favorably situated and qualified for the work, but he wanted to advise against the unreasonable and disastrous promotion schemes that have grown up around the popularity of the business. The past season, while in some markets fairly satisfactory prices for desirable fruit had prevailed, in many other markets, partly by reason of lack or organized, systematic selling and distributing methods, market gluts and demoralization had been experienced. In some sections thousands of barrels of apples have gone to waste on account of the large production and poor distribution.

The heavy planting of apples that has been undertaken for a number of years, and is still progressing, is sure to largely increase the apple crop as these new plantings come into bearing, and unless some active steps are taken toward organized storing and supplying the markets, the near future will witness heavy losses in apples. Storage facilities should be established near to points of production, enabling the owner to keep in touch with his holdings. Even in the favored apple section of the Pacific slope, he had seen in the early winter great quantities of apples ungathered on account of bad markets. The best place for the Pennsylvanian to grow apples is at home. It is a legitimate, pleasant, and profitable business, but is sure to become concentrated in the hands of men having skill and experience. Mr. Creasy commended the work of the State Department of Zoology, but suggested that in orchard demonstration work the best educational results could be secured by going into different orchards and neighborhoods each year.

General Fruit Conditions.—Mr. John D. Herr, chairman of the general fruit committee, read an excellent and comprehensive report. It appeared from the reports of his correspondents that but 30 counties in the state had increased planting of apples, while 40 had reported increases the year before. On account of the comparative immunity of the keiffer pear from the various fruit tree enemies, it is likely to show marked increased planting. About 50 percent of a state apple crop was produced last year, the quality of which was generally good. The reports of the correspondents emphasized that spraying must be done thoroly and intelligently to produce the best fruit at a profit.

Prices of apples have ruled lower than last year. Common varieties have sold for $2 per barrel in orchards. Boxed apples, according to variety, quality and location, showed a range of quotations of from 80 cents to $2.50 per bushel. Cider apples averaged about 25 cents per 100 pounds. More damage than usual from field mice was reported, no doubt due to the length of time the ground was covered with snow last winter. The most successful method noted for combatting this danger was that employed by Dr. Joseph Kalbfus, or Harrisburg, in his island orchard. His fields here have previously been literally honeycombed by mice. He reports that he has practically exterminated them by soaking a peck of corn or wheat for several days in a solution of one-fourth ounce strychnine and one pound of sugar, dropping the treated grains in the runways of the mice, carefully covering the grains from birds and poultry.

The severe cold of last winter destroyed many peach trees and 95 percent of the crop. From all data procurable, no deductions of a reliable character can be made as to the controling effects of altitude on the freezing of peach buds. There appears to be no dependable means of meeting the damages of the peach tree borer, except the old time, laborious one of digging him out. Other methods of more or less promise are under experimentation. In a general discussion which followed the report of Mr. Herr, it appeared to be the consensus of opinion that there were none of the generally more hardy varieties of peaches for which could be claimed extreme cold resistant properties.

Orchard Pests.—From the "Entomological Field" State Zoologist H. A. Surface brought a big bunch of pests and things that make the life of the fruit grower and farmer a burden. One of these pests, now claiming considerable attention, is the railroad worm. This pest incubates in partly formed fruit, which falls. If the orchard be pastured with sheep or swine, many of these worms, as well as numerous other fruit enemies, will be destroyed early in their career. San Jose scale did not multiply as extensively as usual last year, but this fact should not mislead the fruit grower into any relaxation of measures for its extermination and control. He had found that spraying arsenical mixture on the silk of sugar corn will destroy the corn worm, so destructive to late sugar corn. Spraying should be repeated in a week. Also that spraying or washing the trunks of peach trees with lime sulfur solution in June, July and August, with one ounce of arsenate of lead added to each gallon, will positively destroy and protect against peach borers.

Modern Orchard Study.—Prof. W. G. Woodbury, of Purdue University, discussed modern orchard methods, especially relating to cultural methods. Numerous instances and experiments of clean culture and of sod and mulch treatment were given. Much evidence on both sides was brought forth, a little summing up done, and the question left largely with the individual to take his choice. Most of the large problems of the fruit grower are nation-wide, but the solutions are, after all, largely a matter of local conditions, under which the experiments must be worked out. There is danger of the up-to-the-minute farmer being impatient of the necessarily slow working out of experiments, demanding the very latest findings in experimental research, so he may lose no time in putting the new knowledge to work in his fields and orchards. Indeed, a very large part of present-day investigational work is merely to find out the wherefore of orchard practices followed for more than a hundred years. Professor Woodbury has reached the conclusion that when the clean cultural method of orcharding and the sod or mulch system are both followed carefully, they are in fundamental accord. The most successful mulch work having come under his observation was of such a character as to be almost beyond the conception of the average orchardist—a great, dense depth of decaying vegetable matter completely covering the ground.

Cultural Methods.—Dr. J. P. Stewart gave comprehensive and exhaustive reports, illustrated by charts, of experiments in cultural methods and fertilizer tests, carried on in different parts of the state. He called attention to four important points affecting the apple grower: Relative yields, sizes, growth of trees and fruit colors. In most cases it makes much more difference what kinds and quantities of plant foods are supplied the trees than the cultural methods followed. The main thing in successful apple production is to furnish the tree the plant food that is needed. Eight out of nine experiments showed that intense tillage of orchards was not best. There are many ideal orchard sites in the state that are not suitable for tillage, and it is manifestly better to follow the sod or mulch system of treatment on these.

Professor Stewart recommended for fertilizing bearing trees an acre application of actual nitrogen, 30 pounds; phosphoric acid, 50 pounds; potash, 25 to 50 pounds. Experiments now indicate that muriate of potash is the best source of potash.

Planting and Pruning.—When Samuel Frazer, Geneseo, N. Y., took the platform to discuss planting and pruning and costs in orcharding, there was much rattling of dry bones among the stand-pat old-timers. Such ideas as digging holes for trees only big enough to crowd in the roots and to get the feet of the planter in to perfectly firm the earth on the roots, and not to cut and trim and prune said roots, according to the laws of the ancient Medes and Persians, was more than the modern M. and P.'s would stand. But after the windstorm of words had spent its outraged fury against the New Yorks, he was seen to stand well rooted, and no doubt maintains "the same opinion still." Mr. Frazer stood for better business methods in good farm management in all lines. He feels that there is much more of an opening for the general apple trade, the trade of the millions, than in the exclusive production of fancy stock to ornament the tables of the very rich. Under good orchard management money can be made selling apples at 50 cents per bushel. He would drain all land needing it. On his land the tracts that had paid best were those which had $45 worth of tile per acre in them. In pruning, always begin at the top, keep the lower limbs. Thinning fruit will always pay. He thins apples to eight inches apart, and peaches to 6 to 8. A man will thin about three trees a day on trees producing 10 bbls. of apples.
—W. F. McS.

PENINSULAR HORTICULTURAL SOCIETY

The annual meeting of the Peninsular Horticultural Society was held at Wilmington, Del., January 14 to 17, 1913. The meeting was one of the most successful that the Society has ever held. The fruit show was especially good, one exhibitor having on show about sixty boxes of apples, and contrary to the general rule of eastern fruit shows, the box exhibits were far more prominent than the plate exhibits.

Mr. Horace Roberts, of New Jersey, gave a short talk on apple growing. Mr. Roberts advocated the application of all fertilizers in the spring, and strongly insisted that all cultivation should cease August 1st. He recommended for a bearing orchard 20 years old, the application of ½ ton of basic slag, 200 pounds of muriate of potash, and 100 to 200 pounds of nitrate of soda per acre. Mr. Roberts has certain unorthodox views as to the proper methods of handling an apple orchard, one of the most startling of which was that of non-pruning. He stated that he did not prune his apple trees, altho he was careful to say that, while this method of handling might be all right for him, he would not insist that it was the proper thing for all apple growers.

Prof. E. R. Lake, of the United States Department of Agriculture, gave a very interesting talk upon orchard conditions in the Pacific Northwest. However, most of his audience concluded that when it came to making money in apple growing, they would take their chances in the East. It was brought out that it cost the Western grower of apples $1.05 per box to grow his fruit and place it upon the Eastern market. Also, that at the present time, Western-grown fruit could be bought for less than $2.00 per box, while Delaware and Maryland boxed apples were selling for from $3.00 to $3.50 per box.

Peaches were quite thoroly discussed by Joseph Barton, of New Jersey, and Prof. C. A. McCue, of the Delaware Experiment Station.

Mr. Barton laid great stress upon the location of the orchard, especially as to its surroundings. He said that while the land should be well drained, so that the peach would not have "wet feet," it was just as important that the orchard should not have low land surrounding it. He advocated setting the trees 18 ft. x 20 ft. The rows being wider in one direction than in the other, facilitated getting about the orchard during harvest time. The peach orchard should not be plowed after it comes into bearing, but the ground should be thoroly worked up with the double disk harrow each spring, and then kept cultivated until the teams are driven out by the weight of the fruit on the tree.

The peach orchard should be intercropped up until bearing age. Mr. Barton used as a fertilizer 700 to 800 pounds of a mixture of acid phosphate and muriate of potash, mixed in the proportion of 1 of muriate to 3 of phosphate, and then adds from 100 to 200 pounds of nitrate of soda. The fertilizer should be applied in the spring. He stated that he wanted a large nursery tree to start with, which to the ordinary peach grower is unorthodox preaching. He believes in a low-headed tree, and spent some time describing the early pruning of the peach. The varieties recommended for southern New Jersey were Greensboro, Champion, Carman, Elberta, Belle of Georgia, Fox Seedling and Iron Mountain. The two things to be taken into consideration in choosing varieties were, time of ripening, and the crop propensities of the variety. Mr. Barton made it a rule to put the fruit on the market in the style of package that was most common on the market at that time. Which means a six-basket carrier for the early peaches, and the 16-quart basket for the later varieties.

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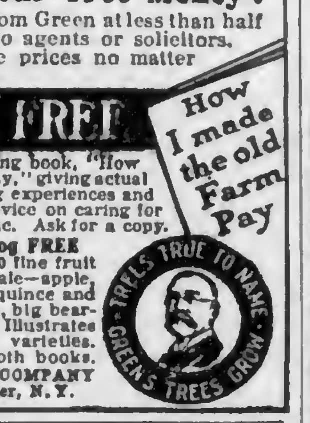

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Professor McCue prefaced his talk on "Modern Peach Growing" by making a plea for a restoration of the peach growing interests in Delaware and on the "Eastern Shore." He pointed out that the Delaware and Eastern Shore crop comes on at a time when the market is bare of peaches from other sources.

According to the census of 1910, which was based on the 1909 crop, Delaware only produced $21,000 worth of peaches. If the census had been based upon the 1910 crop, the figures would have been $800,000. He maintained that with improved methods of handling the peach orchards, peach growing would prove as valuable as apple growing. He mentioned the yellows, scale, brown rot, borers, lack of fertilizers, and lack of proper cultural methods as being accountable for the decline of the peach industry. All of these can be remedied, with the possible exception of the yellows. Many of the trees pulled out as dying from yellows were really killed by the borer. The borer he considered one of the greatest enemies of the peach grower.

Professor McCue also advocated heavy feeding of the peach orchard. He denied the truthfulness of the old maxim, "A peach tree can't stand prosperity." He insisted that a peach tree could and would stand prosperity, providing the prosperity was properly regulated. Heavy feeding with nitrogenous fertilizers should be balanced by the addition of potash and phosphoric acid. The speaker also gave a very thoro discussion of cover crops, and showed how the cover crop should be varied according to season, age of the orchard, thrift of the trees, etc. A chart was also exhibited which showed the influence of certain fertilizers upon the ripening periods of the peach.

On Tuesday evening Professor McCue read a paper on Horticultural Education, and Mr. Richard Vincent, of Whitemarsh, Md., gave a very interesting illustrated lecture upon European Floriculture. He pointed out that many of the great railway stations in this country could be vastly improved by the judicious use of plants and flowers in the waiting rooms. He made especial reference to the Union Station at the National Capital.

At the Conclusion of Mr. Vincent's talk, Dr. J. H. Squires gave an illustrated lecture upon the use of dynamite in farming.

On Wednesday the meeting opened with a paper by Mr. J. W. Killen on Nut Culture. Mr. Killen is an enthusiastic advocate of nut culture, and has originated a number of new varieties of chestnuts, and at the present time has a number of valuable crosses between the hickory nut and butter nut growing upon his farm. Mr. Killen thinks that there is a bright future for nut culture upon the Delaware-Maryland Peninsula.

Mr. J. F. Moore read a most interesting paper upon grape culture. Mr. Moore was, for a number of years, a grower of grapes in western New York, but after five years' experience in Delaware, he thinks that the climate and soil of Delaware are more suitable for commercial grape growing than in New York. He gave the following estimate of the cost of growing an acre of grapes in Delaware:

Trimming	$3.00
Brushing	1.00
Tying	2.00
Spraying (6 times)	5.00
Plowing, cultivating and hoeing..	15.00
Fertilizer	4.00
Total	$30.00

Or, it costs 1 cent per basket to raise a crop of 3,000 baskets per acre, and costs 1¼ cents per basket to harvest. His baskets cost him 1¾ cents, making the total cost 4 cents per basket, or $120 per acre. His returns average 8 cents per basket. He stated that returns at 7 cents per basket and a 3,000 basket per acre crop, represented 15 percent interest on a valuation of $500 per acre for the vineyard. He further stated that a vineyard in Delaware is worth $500 per acre, even if it did not produce more than half a crop. He also thought that there was no danger in overdoing grape culture on the Peninsula.

Mr. W. F. Allen, one of the largest small fruit nurserymen in the world, gave an interesting talk on small fruits. He pointed out that many nurserymen were propagating old varieties under new names. He advocated the planting of more gooseberries and raspberries. He said that the enforcement of the pure food laws would cause a greater demand for gooseberries and their products by the soda fountain trade. He recommended the Houghton and Mountain Seedling for gooseberry varieties, and the St. Regis as a valuable red raspberry.

Horace Roberts, of New Jersey, gave a short talk on strawberry culture. Mr. Roberts uses half a ton of ground bone per acre to fertilize his berries. He decreases the cost of raising his strawberry beds by growing peas and tomatoes between the rows, and fertilizing the tomatoes by the application of 600 pounds per acre of high-grade tankage. His strawberry beds are mulched with manure during the winter. Mr. Roberts also gave a most instructive talk on inter-cropping in the orchards, and stated that by the use of inter-crops he had paid for growing his orchard, and also paid for the land by the time the orchard came into bearing. This talk was one of the most instructive during the meeting.

Mr. H. C. Thompson gave the growers of sweet potatoes a lot of good instruction as to the proper manner in which to harvest and store the sweet potato crop. He laid especial emphasis upon careful handling of the crop at digging time. He maintained that the greater portion of the grading should be done in the field.

Prof. T. B. Symonds discussed the insect pests and fungous diseases that had been especially harmful during the past year.

On Wednesday evening Mr. O. H. Benson, of the Department of Agriculture, gave a most excellent illustrated lecture on "Educating the American Boy."

Thursday the session opened by the election of officers, Mr. W. E. Sanger, of Cordova, Md., being elected president. It was decided to hold the next meeting at Easton, Md.

Prof. C. L. Oppenheim gave a fine talk on combining poultry with orcharding. He showed how the two industries could be handled with profit to both. Poultry are especially beneficial in orchards where plums and cherries are the principal crops.

The last session was given over to a discussion of good roads, with Mr. L. W. Page, of Washington, and Mr. W. I. Walker, of Chestertown, Md., as the principal speakers. Mr. Page advocated the sand clay road for the Peninsula, while Mr. Walker contended that the sand clay road was but little better than our present roads, and advocated the construction of either macadam or concrete roads.

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The only complete and practical book upon the growing of potatoes, giving in detail full information upon the preparation of the soil, care and cutting of seed, cultivating, fertilizing and spraying. By one of the largest and most successful Maine potato growers. A book that every potato grower should have. Sent postpaid for only 50 cents.

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Buy Trees Grown to Please—Large Stock Apple, Peach, Pear, Plum, Cherry, Quince Trees. Grape Vines, Berry Plants, Etc. Catalogue free. Freight prepaid. Special prices on early orders.

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SWEET CLOVER Seed for winter sowing, white and yellow cultivated biennial varieties at farmers' prices. Prices and circular on request. John A. Sheehan, Falmouth, Ky. Rt. 4

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We also ship from Baltimore and Cincinnati.

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"New Star" Corn Planter

Puts the fertilizer down on the sides or in the middle of row—

Corn
Peas
Beans

See every grain as it drops; any number of grains any distance apart

Complete $11.00

Ashton Starke, Richmond, Virginia.

Poultry

A SUCCESSFUL POULTRY PLANT

The Valley Farms poultry plant is located in the central part of Clarion County, Pa. The land at this place is quite rolling, furnishing sheltered coves at various points on the farms, and is well drained, a condition which is so necessary to the health of the fowls. Health and constitutional vigor are essential to successful poultry raising. The fowls are housed in open-front portable colony houses, of which some are shown on this page. They are kept in the best of sanitary condition by cleaning and spraying them every two weeks. Single Comb White Leghorns are raised, and have free range at all times. The colony houses are moved from place to place, giving the fowls new pasture and clean ground, furnishing the most healthful conditions for them.

About 3,000 fowls were kept at this plant during the last year, and this amount will be considerably increased during the coming year, as houses are being built at present to accommodate a large increase. The breeding fowls, which number at present about 1,500, are very large in size for the Leghorn fowls, showing wonderful constitutional vigor, which is accounted for by them having ideal conditions, free range at all times, and having been bred from fowls that have had constant free range for the last 22 years.

THE VALLEY FARM POULTRY PLANT, CLARION CO., PA.

At Valley Farms Poultry Plant we believe in feeding the most highly digestible and palatable of feeds which are free from must or taint. Corn is highly digestible, and is very acceptable to the fowl, therefore it is fed in large quantities in connection with wheat, buckwheat and oats as a whole grain feed. The mash feed is made from grains and protein carriers which are the most convenient at hand, and is about one-third of the total feed ration. About one-third of the protein content of the ration should come from animal source. The mash feed should carry 25 percent of its total weight in protein, about one-half of which should be animal protein. The fiber should run in the neighborhood of 5 percent. We here emphasize the need of using caution in the feeding of musty or spoiled grains or feeds that show decay in any way, as they are dangerous feeds and are liable to cause unhealthy conditions in the fowls.

The greatest of care is used in handling and disposing of the eggs. The nests are kept clean, and at all times are a very inviting place, all of which tends to keep the eggs in the best of condition for market and for hatching, also. Many eggs are sold for hatching, and great care is used in selecting eggs for this purpose, orders being filled the same day they are received with eggs that have been laid the same day. Eggs that are sold for table use are shipped from the plant every day in the week, except Sunday. This method of handling the eggs places them in the hands of the consumer in the freshest and best possible condition; the egg is produced one day and the consumer is eating it the next. The consumer receives his eggs in a neat dozen carton, which is our own special design, and upon the outside of which is our own advertisement telling each customer where the egg is produced. A large and very satisfactory trade has been built up at our plant, and is appreciated by customers and owners of plant alike.

A special shipping crate is used when shipments are sent by express and are to be delivered some distance, which protects the eggs much better and are received in much better condition than eggs that are shipped in the ordinary shipping crates, which are too flimsy to deliver eggs in good condition.—E. L. Phillips, Clarion Co., Pa.

CAUSE OF MUCH POOR POULTRY

The percentage of poultry which arrives on the market in poor condition is entirely too large. The loss to shippers each year from this cause is much greater than realized, and it is a leak which in most cases is unnecessary, as little more care in cooling and getting out the animal heat entirely would insure it arriving in sound condition. A commission house has issued a circular letter on this subject to their shippers. I have received one, and extract the following in regard to this subject:

"Our experience and observation is that the cause of a great deal of poultry arriving in bad order is the fault of the shipper, either by not having cooled out properly, putting too much in barrels without sufficient ice, or shipping dry-packed during warm or muggy weather. Poultry that is to be tanked down in ice water before shipping should be well cooled by putting in three changes of fresh water before putting into ice water. This takes the animal heat out gradually; whereas if put down in ice water too quickly it dives the animal heat to the entrails, making a condensed and extreme temporary heat, which sours the contents of the crop and entrails, and gives a strong odor to the poultry, together with a greenish cast to that thin portion of the bird at the lower point of the breast, which, of course, affects the price from 1c to 2c per pound. The mistake of improper cooling occurs more with winter and inexperienced shippers than with those who ship the year around. However, it frequently occurs even with those who have used too much haste, or dressed too close up to shipping time."—A. E. Vandervort, Delaware Co., N. Y.

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A Full Profit

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All these are possible by the liberal use of good fertilizers, the kind in available forms that will support the crop all through the growing season. Good seed and constant cultivation are necessary, and good weather means much, but without fertility no farmer can make his acres do their best. With a big demand and a good price for every farm product, why not get all there is in it?

The chemists we employ give their greatest attention to availability. They want the fertilizers they make to roll out the bushels at harvest time, **and they do.**

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Makers of brands with fifty years of quality and results behind them.

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The incubator is California Redwood, covered with asbestos and galvanized iron, has triple walls, copper tank, nursery, egg tester, thermometer, ready to use. 30 DAYS' TRIAL—money back if not O. K. Write for FREE Catalog today—NOW.

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Located between Chestnut Hill and Norristown, Pa., on trolley line, two fares from Philadelphia. Near P. R. R. and Reading stations. Numerous large and substantial buildings, nearly new and in perfect repair. Plant thoroughly equipped with power, machinery, up-to-date apparatus. Three acres garden and truck land adjoining. Three story stone house, two piazzas. House recently renovated, has porcelain bath, hot and cold water, supplied by gasoline pumping unit in barn, new range and modern plumbing. Fine well, shade trees, shrubs, flowers and fruit plantings. Splendid market in Philadelphia, easy driving distance away. Will show the place in person. Clear title. Price very low and terms to suit early buyer. Write.

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POULTRY

PEERLESS PEEPS

Day Old Chicks

Our S. C. White Leghorn Chicks are bred from heavy laying stock. We ship them in perfect condition. They thrive from the start, and grow into vigorous layers. Customers are always satisfied. Write for catalog and price list.

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S. C. W. Leghorns—The great egg machines. Large birds, large eggs. Selected layers on free range. Eggs 5 cents each. C. F. Weaver, Rt. 9, York, Pa.

WHITE EMDEN GEESE
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Use nature's best fertilizer, the highly concentrated, pure

SHEEP WIZARD TRADE BRAND MARK MANURE

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Economical and Convenient

One Bag Equals Whole Wagon Load of Barn Yard Manure

Big yields are produced by Wizard brand because it is a concentrated natural fertilizer. Write for interesting booklet and prices in any quantity from one bag to car-loads of 15 tons minimum.

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FERTILE FARMS and unimproved land in Delaware, the State of red apples and ideal homes. For reliable information address, STATE BOARD OF AGRICULTURE, Dover, Delaware.

For Sale—BY OWNER—TEXAS RANCH, 5000 acres Frio Valley; black and sandy loam; $6 to $20; old age reason for selling; no trade. MRS L. DUNHAM, 1527 Montana St., San Antonio, Tex

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for the soil only. Our Agricultural Lime can be applied at the time of seeding and will not burn anything. Will drill, broadcast or scatter. We guarantee immediate shipment, analysis, mechanical condition, fineness, quick results and no burning. Litmus paper free. Write us.

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CALEDONIA MARL BRANCH, Caledonia, N. Y.

The Dairy

AMERICAN BUTTER

Prof. G. L. McKay, of Chicago, read a paper at the New York State Dairymen's Convention on "American Butter," from which the following selections have been made:

I will briefly analyze the American butter as found on our markets. To commence with, we will take the package, or the American butter tub. In my judgment, it is the most abominable, unsightly package that was ever used for butter by any people. I was asked a number of times by English merchants why the Americans persisted in using the tub. Owing to its shape, it can not be cut into prints satisfactorily, like the butter that is packed into boxes. It can not be packed in as small a space for transit as the square package can. Also the chances for breaking off covers in transit are at least five times greater with the tub than with the box; hence, the railroads would welcome a change to the box.

The difference in cost of package in favor of the box would amount, I think I am safe in saying, to about a million dollars annually to the producers in this country. We are badly in need of a standard package that would sell in all parts of the country the same. The Pacific Coast trade demands the box entirely, while the East wants the tub. One of our members wrote that it cost him 22 cents for a box complete, including wax liners and parchment. This box would hold 80 lbs. of butter. While on the other hand, it would cost him 31 cents for a tub and liners, the tub holding 61 to 63 lbs. Prices of 68 to 70 boxes in the West vary from 14 to 15 cents; that is, in the knock down. It costs from 1 to 1¼ cents to put them together.

SILAGE FOR WINTER AND SUMMER.
Silos on Overlook Farm, Montgomery Co., Pa.

One of our large manufacturers informed me that thru a mistake a carload of butter in tubs was shipped West and a carload of butter in boxes shipped East. The butter in both cases sold one cent below market price, because it was shipped in wrong kind of package, so we can readily see the benefit to be derived from a standard package. There was no defect in the butter in either case, but the package did not suit the trade. There should be no virtue in a package, but the one that gives the best service, and especially if it cost less, should be adopted. This is something that our commission men and dealers should seriously consider.

One of the chief defects of the American butter is its irregular quality. This is largely due to the lack of a uniform system being followed by the makers thruout the country. Many makers want to be a law unto themselves; that is, they each have their own ideas of making butter, therefore, there seems to be no set rules followed by the American maker. Some use starters in cream ripening and others do not; some pasteurize their cream at a high temperature, while others pasteurize at a medium low temperature, and still others at a low temperature.

If I were to ask the makers here what effect pasteurization had upon cream, possibly 95 percent would answer that it destroyed the bacteria; and this answer would be absolutely true, as far as it went. But it is possible for the remedy to be worse than the disease. If you ask me what effect pasteurization has upon cream, I will tell you frankly that I do not know, and I do not know of any experiments that have been conducted that show the chemical effect on the fat and other constituents of cream. If you heat cream that is partly sour, from a very low temperature to a temperature as high as 185 degrees in the one heating, there is grave danger of injuring the quality, as some portions of that cream must necessarily reach a temperature of over 200 degrees F.; that is, the portions of the cream that are next to the plate of the pasteurizer will reach that temperature.

The action of this excessive heat on the fat and other constituents no doubt imparts bad flavors to the cream that are transmitted to the butter. I am not opposed to pasteurization, either high or low pasteurization. I maintain, however, that the process when rightly done is a very delicate operation. When pasteurization is done in the vat, as is practiced now in creameries, a temperature of 150 to 155 degrees is sufficient, especially if cream is to be held 15 to 20 minutes at this temperature.

I have been scoring butter for some time, in some experiments that are being conducted by Purdue University. In the last scoring I observed a difference of about three points in favor of pasteurization, as against butter made from this same cream without being pasteurized. I understand that the cream was very sour in both cases. The temperature of heat in this particular case was 150 degrees.

A starter is usually in the best condition for use just after it thickens. If a maker is not ready to use it at that time it should be cooled immediately and held at a low temperature. Under ordinary conditions, the larger the percent of good starter used, the better will be the result. I mean by this, anything up to 25 percent. Especially will the large percent give better results if cream is to be churned after pasteurization without being ripened. When cream is ripened, 10 percent will give good results.

In the churning of cream, no set temperature can be given. I prefer to

Which COW Is Worth The MOST?

This cow cost $100. She produced 5000 lbs. of milk in a year.

This cow cost $125. She produced 6000 lbs. of milk in a year.

Both cows required the same care and the same amount of roughage, but the best cow produced considerably greater profit. Considering the cost of these two cows and the fact that it takes the same amount of labor and the same amount of roughage, which is the cheapest cow to keep? Which cow would you buy? The best one of course. You know it would be poor business to buy the poorer one because it is *The Extra Quarts* of milk above the cost of labor and feed that *pays you your profit*

Now, here's another problem just as simple—

Which FEED Is Worth The MOST?

This bag represents home-mixed feeds or the ordinary dairy feeds. With this feed your cows will produce 185 quarts of milk which at 3½c a quart is worth $6.49, at a cost for the feed of $1.82, leaving you a profit for your hay and labor of $4.65.

This bag represents Larro-feed, the new high-grade, complete dairy ration. With this feed the same cows will produce 210 quarts of milk which at 3½c a quart is worth $7.35 at a cost for the feed of $2.18, leaving you a profit for your hay and labor of $5.17

Which is the cheapest feed to feed? Which one would you use? Larro-feed of course. You know it would be poor business to buy the cheaper feed because the largest part of the milk production from each cow goes to pay for the hay, labor and feed. What is left over is clear profit. It is the *Extra Quarts* you can get above the cost of hay, labor and feed that makes your dairy pay and on the *Number of These Extra Quarts* depends your profit.

We tell you frankly that Larro-feed costs a little more than ordinary feeds, but we also stand ready to prove to you *At Our Risk* right in your own dairy that it will produce enough *extra milk* to offset the difference in cost of feeds several times over. Based on actual results Larro-feed is the *Cheapest* feed you can buy and that is what counts!

Larro-feed
A Ready Ration for Dairy Cows

The new, high-grade, complete dairy ration is made of these choice milk-producing, health-giving ingredients—Dried Beet Pulp, Cottonseed Meal, Distiller's Grains, Gluten Feed, Wheat Bran, and Wheat Middlings. It contains absolutely no weed seeds, no screenings, no mill sweepings, no oat hulls, no oat clippings, no corn cobs—nothing but best and carefully tested ingredients. "The proof of the pudding is in the eating."—the proof of the feed is in the feeding.

Make This Test —Then Decide

Go to your dealer, get as many sacks of Larro-feed as you need. Feed two sacks (200 lbs.) at our risk. Watch results and if you are not satisfied that Larro-feed produces more milk—pays you better than the feed you are using now, take back the un-used sacks to your dealer. He is authorized by us to refund your money without question or quibble and to make no charge for the trial sack. You have everything to gain and nothing to lose in making this test at our risk.

Try Larro-feed NOW.

(15) The Only Feed That's Guaranteed

The Larrowe Milling Co.
615 Gillespie Bldg. Detroit, Mich.

Larrowe's Kiln Dried Buckwheat Flour is the genuine unadulterated old-fashioned flour with the real old-fashioned buckwheat flavor, produced at Cohocton, Steuben Co., N.Y. Your grocer will be glad to know where he can get it. The Larrowe Milling Co., Detroit, Mich.

Dairy Shorthorns. Good young Reds and Roan bulls for sale. Registered stock at right prices. GEO. L. MARVIN - Andover, Ohio

Two Jersey Cows For Sale. Fresh. Fairy Boys, Queen, 230400, Eminents Bessie L, 242444. Herd Bull son of Majesty. High class. OAK VALLEY STOCK FARM, Rt. 5, Bucyrus, O.

HOLSTEIN BULL CALVES for sale. Sired by Son of King of Pontiacs whose dams and granddams are daughters of [illegible] De Kol. Average butter both dams, 24.68 lbs. 7 days. MRS. J. F. BRANDS, [illegible], N. Y.

Holstein Friesian Cattle. Royal breeding. Get A. R. O. bull calves. Write. HOME FARM, CENTER VALLEY, PA.

churn in 35 to 40 minutes, when churn is half or two-thirds full of cream. I would churn in granules as large as corn. There is not much danger of over-churning. If the butter even rolls up a little, it will not do very much harm. After the butter is churned, it is well to let it stand at least 10 minutes before drawing off the buttermilk. This allows small particles of fat to rise to the surface and mix with the mass of butter. In other words, it gives you a little more exhaustive churning.

After the buttermilk has been drawn off, water should be added until you have the same amount as the buttermilk that was removed. Under ordinary conditions, it is better to have the water of same temperature as the butter milk was. This is a case, however, where common sense should be used. If butter is a little soft, the water should be colder, so as to harden it up a trifle. I always prefer, if possible, to have butter gather in an oblong granule, rather than a round granule. A round granule has a tendency to produce leaky butter. In addition to this, it usually runs very low in moisture content.

The temperature of churning is something that has to be governed by the season of the year or the feed consumed by the cows. In the early spring, or when the cows first go on grass, the percentage of olein fats or low-melting fats increase, and the result is that butter usually gathers soft, and unless special care is exercised there is danger of incorporating more moisture than the law allows. During the rainy periods in the summer, we have the same conditions at times, to a certain extent. The water in butter practically all comes from the milk. This is one of the reasons why the man who is making sweet or unsalted butter has difficulty in keeping within the limits of the law.

Some years ago we had the question of butter standards up. I practically stood alone for a 16 percent moisture or an 80 percent fat standard. Since that time, I am pleased to note that practically all the dairy experts of the country are favoring those standards.

In the salting and working of butter various methods are used. Six pounds of salt to 100 pounds of butter fat will usually give 3 to 3½ in the finished product. The salting of butter is largely a matter of common sense, where judgment must be used in getting an even distribution thruout the entire product.

One thing that would help promote dairying probably as much as anything else, would be for the butter and cheese men to make a special study of economic production, so that these factories could be a center of information for the patrons and farmers of that community. The maker of the future has got to be a bigger man than the maker of the past. New problems are coming up all the time, and he has got to grapple with all phases of the dairy question. At the present time we have a duty of six cents a pound on butter and cheese coming into this country. This duty no doubt was placed on these articles by the Federal Government with the view of stimulating the production and growth of our dairy industry. We find, however, by a careful study of our statistics that our cow population is not keeping pace with the human. During the past 10 years the human population has increased about 21 percent, as against 14 percent for cow population. This is a serious problem.

WHAT ARE THE FEED LIMITS?

When a dairy farmer comes to the point of seeing the advantages of good feeding, he is then more in danger of overfeeding than of underfeeding his cows. I am convinced that there are many cows injured by overfeeding. It may be that cows do not go off on their feeds and yet may be injured. We read of rations being fed to some cows, particularly those under test for short-time production, that are fed 20 pounds of high protein grain feeds, and sometimes the amount is increased very much from this amount. In such cases the cow may have the capacity for great production and the accompanying capacity for remarkable digestion and assimilation. That cow may not be injured by the feeding. I remember one cow that I saw while making a year's record, that was then about 10 months along in the test and was eating, with much relish, 22 pounds of grain per day. I have no reason to think that this particular cow was injured by the heavy feeding. There are many similar instances. I have little criticism to offer at this time on the work of the people who are conducting these tests.

When we come to our common dairy herds, we have a different proposition. Commonly we have nothing better than half bloods, and frequently we use "natives." These are hardly bred to the sort of production that a few selected purebreds are equipped for. They can not assimilate feed as do certain animals that have long been bred for high production. At our state experiment station it is the practice and the teaching to limit grain feeds to eight pounds, whether grades or purebreds, and in some cases a lower limit is fixed. This, it should be noticed, is in the case of good cows fed on good corn silage and alfalfa hay. The silage has sufficient corn in it so that little or no corn need be used in the grain ration, and the alfalfa has enough protein to take the place of quite a lot of wheat bran. On the common farm, where these two feeds are supplanted by the use of mixed hay, a larger grain ration may be used.

I will not attempt to say just where to draw the line, but in my own case, where the roughage feeds are those of the usual farm conditions, I am feeding two cows as high as 12 pounds of grain. Others get 10 pounds, if they produce well, while the most of the herd is fed eight pounds of grain daily, in two feeds.

If one is inclined to crowd his cows, it is a good plan to have a veterinarian's thermometer and to make frequent use of it. In fact, the taking of temperatures at frequent intervals is a good practice, as it may aid in the detection of off condition or possibly disease before it is too late to remedy. I think there are more cows underfed than overfed, but my idea is that we need to be guarded against overfeeding. I am writing this from personal experiences after sustaining some losses due to overfeed, as I believe.—H. H. Lyon, Chenango Co., N. Y.

COW TESTING ASSOCIATIONS

All dairymen realize that records relating to production, and cost of production of each individual is of utmost importance, but the majority of dairymen do not keep these records. Cow testing associations overcome this difficulty, since it is more economical, both in time and money, to have the necessary weights and measures taken by an association than to put this burden upon the individual dairyman.

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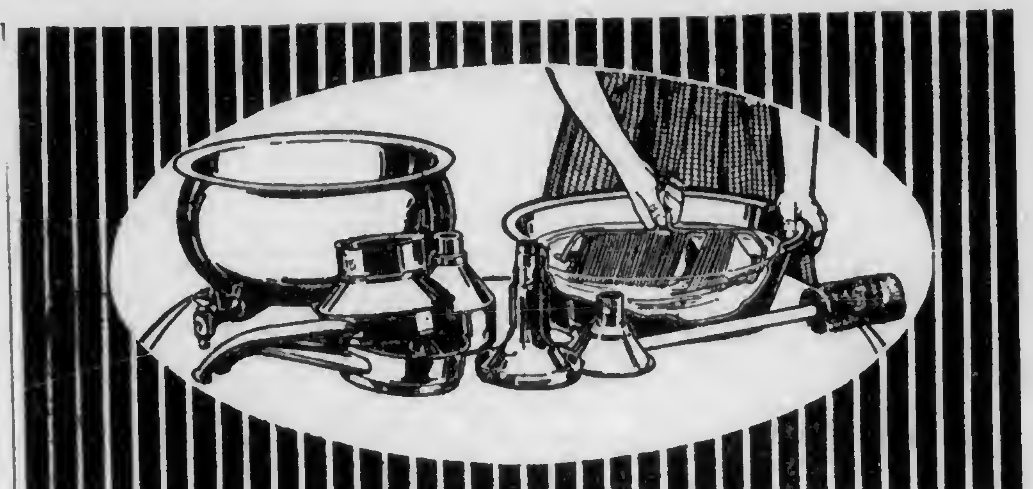

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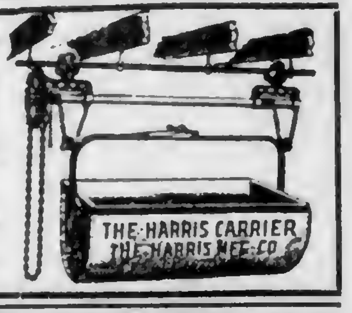

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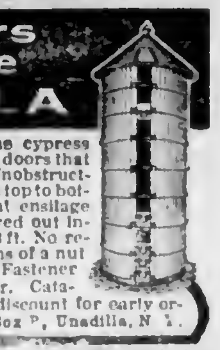

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Entered as second-class matter at the postoffice at Philadelphia, Penna.

The Lawrence Publishing Co., Proprietors
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Branch Offices For Advertising Only
Cleveland, O., 1011-1015 Oregon Ave.
New York City, 41 Park Row
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Detroit, Mich., 39-45 Congress St., W.

TERMS OF SUBSCRIPTION

One Year	52 copies to one person	$0.50
Two Years	104 " " " "	$1.00
Three Years	156 " " " "	$1.25
Five Years	260 " " " "	$2.00

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No advertisement inserted for less than 45 cents per insertion.
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Philadelphia, Pa., February 8, 1913.

THE GOVERNOR'S POSITION

Governor Tener's statements before the legislative committee of the State Grange last week have raised a question as to the position of His Excellency toward the agricultural interests of the state. In accordance with the action of the State Grange, in its recent annual session, this committee waited on the Governor with the request that he appoint a man chosen by the grange to represent the state on the national commission which is to study rural credit systems abroad. The request was a very reasonable one, as the grange is universally conceded to be the one great farmers' organization of the state, numbering close to 100,000 members. As the national commission is to represent the farmers, and study conditions in the interests of farmers, it is only reasonable to ask that it be made up of men who are thoroly familiar with farm conditions here. No organization in this state has a better right to name such a representative, or to ask that he be appointed than the grange. But conceding all this, if the Governor had merely refused to appoint their representative, or had reasonably questioned their right to ask for such appointment, there would have been less serious objection to his position. But he not only refused to consider their request, but he denounced their organization, questioned their right to interest themselves in legislative affairs, and asserted that farmers are not carrying their just share of the taxes. The position of the grange in this state is too well known to require comment. The grangers are well qualified to take care of that position, even in the face of the Governor's denunciations. But he was not attacking the grange alone as an organization. When he raised the question of the right of the farmers to criticise or question legislative and executive acts in the state, because of unequal tax burdens, he was directing his attack against the farmers as a whole. His statement that the farmers are not carrying their share of the taxes is too absurd to represent his best judgment or his clear understanding of conditions. In his message to the present assembly, the Governor gave his endorsement to practically all of the leading issues in agricultural legislation. He favored liberal appropriations to agricultural education and other agricultural enterprises, and his position was accepted as being particularly friendly to the farmers. This apparent change of heart raises a question as to where the Governor really stands. As representatives of the greatest single industry of the state, the farmers have a right to know.

THE HIGHWAY FUND

The more the administration of the state highway department is probed, the more interesting and enlightening the situation becomes. A complete investigation would be most timely during the next few weeks. The proposition to bond the state for $50,000,000 for road building could be dealt with more intelligently and with more satisfaction to the public generally, if the legislators and the public might know just what has been done with the $5,000,000 already placed at the disposal of the department. The accounting on the latter appropriation is by no mains satisfactory, and the pressure thus far exerted has not been successful in bringing out the information desired. Sentiment in favor of the larger bond issue is none too strong, and it will decline rapidly unless the present question of honest and efficient administration is cleared up. The Governor and the highway department are working hard for the $50,000,000 bond issue They can do nothing better in the interest of the cause than make a complete statement of the affairs and operation of the department. If they will not make this voluntarily, the assembly should lose no time in making a thoro investigation. The people should insist on knowing what is being done with this money before adopting a policy which will place ten times the amount at the disposal of the officials. The department and the present system of road maintenance are on trial before the people. Neither can afford to attempt to cover up flaws or defects at this time.

THE VALUE OF PARCEL POST

A full and comprehensive study of the value of the parcel post system is at this time impossible, since it has not been in operation long enough to draw fair conclusions. However, even at this time, certain results have been obtained and certain failures have been seen, all of which may point to the ultimate value of the system. That the time was fully ripe for the parcel post is beyond doubt. It was declared by the Postmaster- General to be the greatest and most immediate success ever scored by any new venture in the country. There is no question of this from the standpoint of the Postoffice Department. The Bureau of Engraving has been forced to increase its output of parcel post stamps from 5,000,000 to 10,000,000 each day. During the first four days more than 200,000 parcels were mailed from New York, and the regular daily average from that station will probably be 100,000. Hence there is no doubt as to the present popularity of the service; but whether it is going to fulfill the claims made for it is, as yet, an unanswered question. It was expected that the increase in competition would force express rates down, and also that the general high cost of necessities would necessarily be lowered by reason of the closer relationship between producer and consumer. It looks now as if the express companies would be forced to a reduced rate schedule. There have been a great many tests as to the efficiency of both the parcel post and express service, and in nearly every case parcel post won the trial. Two parcels were sent from Chicago to Atlanta, one by post and the other by express. The post won the race by 10 hours and 5 minutes. The rates were also in favor of the post. It may be a significant fact that one express company is introducing a special service for packages of 11 pounds and under. This evidently is the result of competition, and should it become general, the post service will have fulfilled part of its obligation to the public. But as to the reduction of the cost of living, the outcome is not so sure. A dozen eggs were shipped by post from Harrisburg to Philadelphia, costing 83 cents; 35 cents for the eggs, 15 cents for the package and 30 cents postage. It certainly would be difficult for a farmer at Harrisburg to work up a direct egg trade in Philadelphia, when he would have to get at least 83 cents for a dozen eggs. A pound of scrapple was sent from Coatesville to Philadelphia, and cost 23 cents, including the value of the scrapple and the postage. Here again, a farmer would find difficulty. This trouble can, of course be somewhat overcome by shipping in maximum quantities; but at best, the difficulty is a real one and presents a barrier to the direct selling scheme until some further changes are made.

NATIONAL CORN SHOW AWARDS

The fifth National Corn Show, held at Columbia, S. C., January 27 to February 8, was the best yet held. The show has matured into the broadest and most representative agricultural show of the year. While other grains are being admitted to competition, and study, corn is still King, and awards on corn are of first interest. Indiana again won top honors, taking the grand championship on both single ear and ten-ear entry. The winning single ear was of the Johnson County White variety, grown and exhibited by Joe Helms, of Richmond, Ind. The ten-ear prize this year went to an entry of Rieds Yellow Dent, shown by Charles Short, of Greenburg, Ind. Indiana also had a white ten-ear entry which was in the running for grand championship honors until it was discovered that two kernels in one ear had been glued in. While this discovery did not indicate any effort to defraud, but merely a zealous attempt upon the part of the exhibitor to retain his entry intact, the judges promptly disqualified the entire entry, and the championship on ten ears of white was awarded to J. T. Henderson & Sons, Shelbyville, Ky. The Henderson entry was placed second to the yellow corn shown by Short for grand championship honors. The glue incident was generally regretted, because the white entry was conceded to be one of the very best, if not the best, ten-ear entry ever shown at a national show. This is no disparagement of the yellow corn which captured the honors, but merely the statement of a fact which made the disqualification particularly unfortunate. Complete awards on corn were as follows:

Ten Ear Awards—Dent

Central Zone.—White, J. T. Henderson & Son, Shelbyville, Ky.; yellow, Charles Short, Greenburg, Ind.; mixed, G. A. Brown, Franklin, Ind.

Northern Zone.—White, N. R. Raessler, Beloit, Wis.; yellow, N. R. Raessler; mixed, Chris Stoen, Bereford, S. D.

Eastern Zone.—White, Josiah Massey, Chestertown, Md.; yellow, Burton Bayard, Waynesburg, Pa.; mixed, D. M. Landis, Lancaster, Pa.

Southern Zone.—White, G. T. Buford, plane, Va.; mixed, G. L. Fentress, Sanasba, Tex.
Pulaski, Tenn.; yellow, B. A. Rucker, Dela

Western Zone.—No samples entered.

National Sweepstakes.—White, J. T. Henderson & Son; yellow, Charles Short; mixed, C. A. Brown.

Grand Champion (winner Indiana trophy) —Charles Short.

Single Ear Awards—Dent

Eastern Zone.—Pucey Cloud, Kennett Square, Pa.

Central Zone.—Joe Helms, Richmond, Ind.

Northern Zone.—N. R. Raessler, Beloit, Wis.

Southern Zone.—Henry Manteke, News Ferry, Va.

Western Zone.—No entries.

Grand Championship (winner Kellogg trophy).—Joe Helms.

Ten Ears—Flint

Northern Zone.—Geo. J. Frederick, Brooklyn, Mich.

Eastern Zone (Second Grand Championship).—James M. Moore, Bethlehem, Pa.

Single Ears—Flint

Northern Zone.—Geo. J. Frederick, Mich.

Eastern Zone (Second Grand Championship).—N. I. Bowdistch, Framingham, Mass.

A full report of show will be published next week.

HIGHWAY DEPARTMENT CHALLENGED TO DEBATE

The legislative committee of the Pennsylvania State Grange met in Harrisburg January 24 and 25, to consider plans for pushing grange legislation. The road question was considered, among others, and as the positions taken by the Highway Department and the grange upon the subject of bonding the state for road improvements are so decidedly opposite, it was thought best to come together, if possible, and discuss the question at length. Accordingly the grange issued a challenge to the Highway Department for such a debate. It was requested that a reply be made by February 1. At this time, nothing has been heard from the department. The grange is giving the friends of the bond issue a fair opportunity to present all of their arguments and place the issue squarely before the people. A refusal to accept the challenge can only be construed as an admission of no logical arguments to present, or a fear of having those arguments overturned.

STATE CAPITAL NEWS

Pure Seed Bill.—Early action is expected on a pure seed bill, designed to safeguard the farmers from frauds in the sale of seeds. Under the terms of the bill it will be unlawful to sell or offer for sale any seeds of timothy or other grasses or any clovers or alfalfa or mixtures which shall contain more than 5 percent of oxeye daisy, wild mustard, wild carrot, wild radish, horse nettle, sedge plant, brush bindwood, Canada thistle, Russian thistle, crab grass, curled dock, yellow or sour dock, narrow-leafed or buckthorn plantain, broad-leafed plantain, wild onion or nodding garlic, clover dodder or flax dodder. The Secretary of Agriculture is charged with the enforcement of this act. The penalty for violation is made from $10 to $20 fine, and for second offences, $100.

Licenses for Commission Men—An act presented by Representative George W. Williams, of Tioga County, provides that every person, firm or corporation selling agricultural products on commission must take out a license from the Department of Agriculture at a cost of $10 and give a bond for $2,500. These licenses are to hold for one year, and when any person has consigned products to a licensed commission man or firm and not been paid within 30 days, or such time as stipulated in the contract, he can have recourse to the bondsman for recovery. The penalty for engaging in the business without a license is made a fine of not more than $1,000 .

State Fair Bill.—Bills to establish a State Fair Commission are now before both houses. In addition to having the cordial endorsement of the Governor and Secretary of Agriculture, the measure has been backed by a strong statement from the National Secretary of Agriculture, and has numerous friends among the members of the legislature. A number of favorable petitions have been received, and it will have the support of men interested in local fairs. The bill carries an appropriation of $500,000, and that is about the only question over it. Until the financial program is worked out, and the fate of the new taxation measures made known, it will be impossible to figure out what will become of the appropriation. The question of a site has not entered into discussion of the project, that being left until after the commission is created by common consent.

Grade Crossings.—All of the public service commission bills drafted thus far give the commission explicit powers to abolish grade crossings in city or country, in case proof is established that they are dangerous. A bill creating a commission with large powers would be followed by speedy removal of some death traps in rural districts.

Provide for Platforms.—Another railroad bill which stands an excellent chance of being enacted provides that railroads must erect platforms at all stations. In many parts of the state the stations are without platforms, altho much used for the handling of dairy cans, produce and other farm freight.

Conference on School Bills.—Members of the State Board of Education will meet here on February 9 for discussion of the proposed school legislation, including the plan to furnish aid to rural districts so that they can give children the minimum term of schooling for a year. The recommendation that the state appropriation for schools be increased to $20,000,000 a year is a matter of revenue now. Most of the members are favorable to it, but whether the state can stand it remains to be seen.

Road Legislation.—Three important road bills are now before the legislature, one being the resolution proposing the $50,000,000 bond issue for roads which, if passed this session, will go before the people. The others are establishing a procedure whereby the state can secure turnpikes on the lines of main highways and for return of money from automobile licenses to the state highway department for road purposes. A bill to provide cash for the payment to townships of the dirt road allowance is in preparation. It will call for $2,000,000, but passage with that sum is considered unlikely, unless the outlook for the bond issue is certain.

Game Bills.—There is no lack of game bills for this session, and some of them seem to be filled with the same sort of combustible material as in former years. The bill to extend protection to game birds because of the services rendered in destroying insects is opposed because of the predatory habits of the birds, while a pitched battle over the hunters' license bill is imminent. Many petitions in favor of the measure are being prepared, while remonstrances promise to be numerous. The committee on game will give hearings on this bill, which would require every hunter to pay $1 for a license, the money to be used for the extension of the game protection and propagation work of the State Game Commission. What seems to be needed is a general codification of the game laws instead of continual changes.—Hamilton, Harrisburg, February 3.

NEW YORK LETTER

To License Commission Merchants.—Hon Seth Low, of New York, Dean L. H. Bailey and Senator F. N. Godfrey appeared before the committee on agriculture of both assembly and senate last week to support Senator Roosevelt's measure to require commission merchants to take out a license and give bonds and put themselves under the supervision of the agricultural department. Dean Bailey said that the marketing of produce is a public service process, and the people have a right to regulate it. Senator Godfrey said that the provision requiring the commission men to furnish the names of purchasers of produce was the really important feature of the bill.

Grange Insurance Company.—The Dutchess and Columbia Fire Relief Company issued 580 policies last year, and deducting those canceled and expired, the total number of policies now is 2,862 and the total amount of insurance carried is $7,108,260. Losses last year were $26,000, which is larger than usual. Covering a period of 15 years, the average assessment per $1,000 is a little over $1.92.

The Highway Laws.—There may be some radical changes in the road laws of the state this year. These proposed changes relate to the election of town superintendents for a period of four years, instead of two, and making them subject to removal; to have the

te aid in building bridges; and to authorize towns to spend $1,500 instead of $500 as w for road machinery.

A New Bureau Proposed.—A bill now before the legislature provides for the establishment of a bureau in the agricultural department for the supervision of co-operative associations, the head of the bureau to receive salary of $3,000 a year. Part of his duties ll be to assist in the development and organization of these co-operative enterprises.

Some Recent Agricultural Bills.—Among the more important of the agricultural bills now before the legislature are the following: establish a school of agriculture at Cook Academy, in Schuyler County; to appropriate 100,000 for the erection of an administration and demonstration building at the state agricultural experiment station at Geneva; to appropriate the sum of $250,000 for buildings for the state college of forestry at Syracuse; to establish a state school of agriculture on Long Island and making appropriation therefor of $90,000; to amend the public health law relating to cold storage. The last named bill is very important, in that it makes several changes in the existing law. It limits the cold storage period for eggs, butter, flesh, fowl or fish to three months, and any other article used for food to a period not longer than six months. It also makes it unlawful for anyone engaged in the cold storage business to receive any fowl from which the head or feet have been removed, or any fish from which the head shall have been removed, except salted or cured fish. The penalty for the violation of the law is not less than $500 or one year imprisonment or both.—New Yorker.

COUNTY NOTES

Pike Co., Pa. (N. E.), Jan. 20.—Mild and rainy. Cows, $25@40; horses, $100 200. Crops good. Corn, 56c; rye, 0c; wheat, $1; oats, 35c; potatoes, 50c; hay, $15 ton. No farm work being done now, except getting things ready to commence in the spring.—Rupert P. Wilis.

Fayette Co., Pa. (S. W.), Jan 18.—Warm and wet; but very little snow this month. Live stock doing well, considering muddy yards and fields. Wheat and rye are growing fine. The very late-sown wheat is picking up fast. Wheat, $1; oats, 50c; corn, 65c; rye, 80c; hay, $20; straw wheat, 40c bale; oat straw, 45c; steers, 6@7c; fat cows, 4@6c. Farm work goes slowly on account of so much rain. Some plowing done, and some are preparing to spray fruit trees soon. Spraying is here to stay.—Samuel A. Harris.

Mercer Co., Pa. (N. W.), Jan. 18.—Warm and rainy. Chickens, 10c lb.; eggs, 27c doz.; butter, 28c lb.; hogs, dressed, 8c lb.; apples, 50c bu.; potatoes, 50c bu. Markets dull. Slow sale for most farm products.—A. K. De France.

Juniata Co., Pa. (C.), Jan. 18.—Weather warm and wet. No snow. Stock in good shape and healthy. Wheat looking well. Wheat, $1; corn, 5c; oats, 40c; hay, $12 to $14; beef cattle, 5@7c; pork, 9c dressed; chickens, 10c; eggs, 25c; butter, 41c. Not much doing,owing to wet, soft weather. —D. B. Esh.

Frederick Co., Md. (N. C.), Jan. 23.—Weather changeable; rain every two or three days. Stock in good condition. Wheat looking fine. So much freezing and thawing hard on the clover. Fresh cows, $50@90; do. fat, 5@6c lb.; steers, @7c lb. Market a little lower. Farm work in good shape. No ice harvested yet. Springs and small streams flush. Many farmers hauling wheat and corn to market.—H. C. Fawley.

McKean Co., Pa. (N. C.), Jan. 25.—Weather warm and mild. No frost to speak of. Stock in good condition. Beef and pork advancing moderately; the same with some of the feeding stuffs. Butter holds about the same. Strictly fresh eggs dropped to 30c doz. Storage eggs, 22@23c. In this section wood haulers would rather see snow. Farmers find difficulty in getting manures on the ground. Vetches, rye and wheat not benefited by open winter.—M. Ingalsby.

Camden Co., N. J. (S. W.), Jan. 21.—Weather fair with an occasional shower. Ground not frozen. Stock may be seen in the fields most of the fair days. Pork, 10c; poultry, young, 20@25c lb.; old fowls, 15c; eggs, 45c; veal calves, 8@9c, live weight. Some of the farmers have a good part of their sod ground plowed, as the weather has been favorable for such work.—Wesley R. Stafford.

Lawrence Co., Pa. (W. C.), Jan. 20.—Warm and wet; mildest winter in 20 years. Stock doing well. Wheat wintering fine, altho went into the winter in poor shape. Wheat, $1.10; corn, 35c; potatoes, 75@80c; apples, 75c; hay, $15; pork, 10c. Lots of plowing done. Too muddy to haul lime. Many are talking lime.—J. A. Boak.

Steuben Co., N. Y. (S. W.), Jan. 20.—Weather warm. Much rain of late; no frost in ground. Stock looks good, but hard to buy at any price. No good cows for sale. Hay market continues to grow weak, $12 to $14 ton. Eggs, 22c, at store; butter, 35c. Not much can be done on the farm. The ground is wet. Some plowing on uplands.—G. W. Rowley.

Center Co., Pa. (C.), Jan. 18.—Weather spring-like and showery. Live stock doing well. Horses, $150@250; colts, $50@80; fresh cows, $40@80; porkers, 9c; veal calves, 7@8c lb.; chickens, 12c; butter, 25@40c; potatoes, 75c; wheat, 95c; oats, 40c; shelled corn, 60c. Some plowing done. Wheat is in fine condition.—W. H. Fry.

Sullivan Co., Pa. (N. C.), Jan. 14.—weather very changeable, with scarcely no snow. Live stock in fair condition. Winter grain is looking fine. No hay or grain being sold to speak of. Not much live stock for sale. Coal mines working full blast. Eggs, 25c doz.; butter, 27@30c. Farmers are getting up firewood. Roads very rough. Folley Grange will entertain the next Sullivan Co., Pomona.—Geo. C. Juck.

PAYS ADVERTISERS

In a letter from Lunt-Moss Co., 37 Warren Street, New York City, who have been advertising water supply systems, they write: "We will likely increase the size of our advertisement about March 1st, as the results from our advertising in Pennsylvania Farmer have been very successful. We note that the replies are from a class of people desiring first-class outfits and actual buyers."

Use KEROSENE Engine Free!

Amazing "DETROIT" Kerosene Engine shipped on 15 days' FREE Trial, proves kerosene cheapest, safest, most powerful fuel. If satisfied, pay lowest price ever given on reliable farm engine; if not, pay nothing. No waste, no evaporation, no explosion from coal oil.

Gasoline Going Up!

Gasoline is 9c to 15c higher than coal oil. Still going up. Two pints of coal oil do work of three pints gasoline.

Amazing "DETROIT"

—only engine running on coal oil successfully; uses alcohol, gasoline and benzine, too. Starts without cranking. Only three moving parts—no cams—no sprockets—no gears—no valves—the utmost in simplicity, power and strength. Mounted on skids. All sizes, 2 to 20 h. p., in stock ready to ship. Engine tested before crating. Comes all ready to run. Pumps, saws, threshes, churns, separates milk, grinds feed, shells corn, runs home electric lighting plant. Prices (stripped), $29.50 up. Sent any place on 15 days' Free Trial. Don't buy an engine till you investigate money-saving, power-saving "DETROIT." Thousands in use. Costs only postal to find out. If you are first in your neighborhood to write, you get Special Extra-Low Introductory price. Write! (138)

Detroit Engine Works, 347 Bellevue Ave., Detroit, Mich.

Cylinders cannot carbonize

Would you hire a lazy man? No, you want a worker.

PATENTED COLUMBIA BATTERIES

are honest, hard workers. Don't accept any other. You deserve COLUMBIAS and will get them if you insist.

Cost No More; Last Longer

For sale by all good dealers

National Carbon Co.
Cleveland, Ohio
Factories in U. S. and Canada
Fahnestock Connections without extra charge.

1847 FRUIT TREES 1913

Wiley's Better Trees in the end cost less. SUGGESTIONS on choice of varieties for various localities. Pruning, spraying, etc., etc., issued in booklet form free with catalog. Send for it now.
H. S. WILEY & SON, Alden St., CAYUGA, N. Y.

Cut Down Upkeep

By R. E. Olds, Designer

I have built cars for 26 years—60,000 of them.

But of all I have learned, nothing else compares with these ways for cutting upkeep—shown in Reo the Fifth.

The Final Cost

The buyer sees just the car's first price. But the vital thing is the after cost.

That may be little or it may be much. It depends on the builder largely. And the difference to you, in the course of five years, may be $1,000.

How I Reduce It

One big item is tires.

In Reo the Fifth I cut this cost by using tires 34x4. They cost $60 per set more than tires often used on a car of this weight. But they save many times that in tire bills.

I use in this car 15 roller bearings —11 Timken, 4 Hyatt. They cost five times as much as common ball bearings. But they do not break.

I use 190 drop forgings, at twice the cost of steel castings. But drop forgings don't have flaws.

Margin of Safety

Axles and driving parts should show very large over-capacity. I build them all to stand the tests for a 45 h. p. car. That leaves enormous margin.

I have all steel made to formula. Then I analyze each lot twice.

For testing my gears I use a crushing machine of 50 tons' capacity.

I use 7-leaf springs, two inches wide. And I test them for 100,000 vibrations.

Each engine is tested for 48 hours —20 hours on blocks, 28 hours in the chassis. I employ unusual tests.

Each car in the making gets over 1,000 separate tests and inspections.

Costly Items

I use a $75 magneto to save ignition troubles. I doubly heat my carburetor, for low-grade gasoline. I use a centrifugal pump, not a syphon. That adds about $10.

I use 14-inch brake drums.

I give each body 17 coats, so the finish will endure. I use the best genuine leather in upholstering. Also the best curled hair.

I am using flush electric dash lights in place of the old-style lamps.

All these things are costly. Yet I supply them, through factory economy, in a wonderfully low-priced car.

A car without them is likely to cost five times as much for upkeep. There may be costly repairs, and frequent.

I never would buy a lesser car. Therefore, I never shall build one.

Our $100 Control

Here is one feature worth $100 which costs not an extra penny.

It's the Reo center control. All the gear shifting is done by moving one little handle only three inches in each of four directions. It is as simple as moving the spark lever.

The driver sits on the left hand side, as in the latest high-priced cars. And this control lever is at his right hand.

Both brakes are operated by foot pedals. There are no brake levers, so both front doors are clear.

A car in these days should have these modern features.

Sold by 1,000 dealers. Write for our 1913 catalog and we'll tell you the nearest show-room.

R. M. Owen & Co., General Sales Agents for Reo Motor Car Co., Lansing, Mich.
Canadian Factory, St. Catharines, Ont.

Reo the Fifth
The 1913 Series
$1,095

30-35 Horsepower
Wheel Base—112 Inches
Tires—34 x 4 Inches
Center Control
15 Roller Bearings
Demountable Rims
Three electric lights
190 Drop Forgings
Made with 5 and 2 Passenger Bodies

Top and windshield not included in price. We equip this car with mohair top, side curtains and slip cover, windshield, gas tank for headlights, speedometer, self-starter, extra rim and brackets—all for $100 extra (list price $170).

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AGRICULTURE THE KEYSTONE OF NATIONAL PROSPERITY
ESTABLISHED 1880 PUBLISHED WEEKLY

Established 1880. Published Every Saturday.
Entered as second-class matter at the postoffice at Philadelphia, Penna.

The Lawrence Publishing Co., Proprietors
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M. L. LAWRENCE..........Vice-President
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General Office
214-216-218 South 12th St., Philadelphia, Pa.

Branch Offices For Advertising Only
Cleveland, O., 1011-1015 Oregon Ave.
New York City, 41 Park Row
Chicago, Ill., 600 First Nat'l Bank Building
Detroit, Mich., 39-45 Congress St., W.

TERMS OF SUBSCRIPTION

One Year	52	copies to one person	$0.50
Two Years	104	" " " "	$1.00
Three Years	156	" " " "	$1.25
Five Years	260	" " " "	$2.00

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15 cents per agate-line measurement, or $2.10 per inch (14 lines per inch) each insertion.

No advertisement inserted for less than 45 cents per insertion.

No deceptive, immoral or swindling advertisements inserted at any price.

Philadelphia, Pa., February 8, 1913.

THE GOVERNOR'S POSITION

Governor Tener's statements before the legislative committee of the State Grange last week have raised a question as to the position of His Excellency toward the agricultural interests of the state. In accordance with the action of the State Grange, in its recent annual session, this committee waited on the Governor with the request that he appoint a man chosen by the grange to represent the state on the national commission which is to study rural credit systems abroad. The request was a very reasonable one, as the grange is universally conceded to be the one great farmers' organization of the state, numbering close to 100,000 members. As the national commission is to represent the farmers, and study conditions in the interests of farmers, it is only reasonable to ask that it be made up of men who are thoroly familiar with farm conditions here. No organization in this state has a better right to name such a representative, or to ask that he be appointed than the grange. But conceding all this, if the Governor had merely refused to appoint their representative, or had reasonably questioned their right to ask for such appointment, there would have been less serious objection to his position. But he not only refused to consider their request, but he denounced their organization, questioned their right to interest themselves in legislative affairs, and asserted that farmers are not carrying their just share of the taxes. The position of the grange in this state is too well known to require comment. The grangers are well qualified to take care of that position, even in the face of the Governor's denunciations. But he was not attacking the grange alone as an organization. When he raised the question of the right of the farmers to criticise or question legislative and executive acts in the state, because of unequal tax burdens, he was directing his attack against the farmers as a whole. His statement that the farmers are not carrying their share of the taxes is too absurd to represent his best judgment or his clear understanding of conditions. In his message to the present assembly, the Governor gave his endorsement to practically all of the leading issues in agricultural legislation. He favored liberal appropriations to agricultural education and other agricultural enterprises, and his position was accepted as being particularly friendly to the farmers. This apparent change of heart raises a question as to where the Governor really stands. As representatives of the greatest single industry of the state, the farmers have a right to know.

THE HIGHWAY FUND

The more the administration of the state highway department is probed, the more interesting and enlightening the situation becomes. A complete investigation would be most timely during the next few weeks. The proposition to bond the state for $50,000,000 for road building could be dealt with more intelligently and with more satisfaction to the public generally, if the legislators and the public might know just what has been done with the $5,000,000 already placed at the disposal of the department. The accounting on the latter appropriation is by no mains satisfactory, and the pressure thus far exerted has not been successful in bringing out the information desired. Sentiment in favor of the larger bond issue is none too strong, and it will decline rapidly unless the present question of honest and efficient administration is cleared up. The Governor and the highway department are working hard for the $50,000,000 bond issue They can do nothing better in the interest of the cause than make a complete statement of the affairs and operation of the department. If they will not make this voluntarily, the assembly should lose no time in making a thoro investigation. The people should insist on knowing what is being done with this money before adopting a policy which will place ten times the amount at the disposal of the officials. The department and the present system of road maintenance are on trial before the people. Neither can afford to attempt to cover up flaws or defects at this time.

THE VALUE OF PARCEL POST

A full and comprehensive study of the value of the parcel post system is at this time impossible, since it has not been in operation long enough to draw fair conclusions. However, even at this time, certain results have been obtained and certain failures have been seen, all of which may point to the ultimate value of the system. That the time was fully ripe for the parcel post is beyond doubt. It was declared by the Postmaster- General to be the greatest and most immediate success ever scored by any new venture in the country. There is no question of this from the standpoint of the Postoffice Department. The Bureau of Engraving has been forced to increase its output of parcel post stamps from 5,000,000 to 10,000,000 each day. During the first four days more than 200,000 parcels were mailed from New York, and the regular daily average from that station will probably be 100,000. Hence there is no doubt as to the present popularity of the service; but whether it is going to fulfill the claims made for it is, as yet, an unanswered question. It was expected that the increase in competition would force express rates down, and also that the general high cost of necessities would necessarily be lowered by reason of the closer relationship between producer and consumer. It looks now as if the express companies would be forced to a reduced rate schedule. There have been a great many tests as to the efficiency of both the parcel post and express service, and in nearly every case parcel post won the trial. Two parcels were sent from Chicago to Atlanta, one by post and the other by express. The post won the race by 10 hours and 5 minutes. The rates were also in favor of the post. It may be a significant fact that one express company is introducing a special service for packages of 11 pounds and under. This evidently is the result of competition, and should it become general, the post service will have fulfilled part of its obligation to the public. But as to the reduction of the cost of living, the outcome is not so sure. A dozen eggs were shipped by post from Harrisburg to Philadelphia, costing 83 cents; 35 cents for the eggs, 15 cents for the package and 30 cents postage. It certainly would be difficult for a farmer at Harrisburg to work up a direct egg trade in Philadelphia, when he would have to get at least 83 cents for a dozen eggs. A pound of scrapple was sent from Coatesville to Philadelphia, and cost 23 cents, including the value of the scrapple and the postage. Here again, a farmer would find difficulty. This trouble can, of course be somewhat overcome by shipping in maximum quantities; but at best, the difficulty is a real one and presents a barrier to the direct selling scheme until some further changes are made.

NATIONAL CORN SHOW AWARDS

The fifth National Corn Show, held at Columbia, S. C., January 27 to February 8, was the best yet held. The show has matured into the broadest and most representative agricultural show of the year. While other grains are being admitted to competition, and study, corn is still King, and awards on corn are of first interest. Indiana again won top honors, taking the grand championship on both single ear and ten-ear entry. The winning single ear was of the Johnson County White variety, grown and exhibited by Joe Helms, of Richmond, Ind. The ten-ear prize this year went to an entry of Rieds Yellow Dent, shown by Charles Short, of Greenburg, Ind. Indiana also had a white ten-ear entry which was in the running for grand championship honors until it was discovered that two kernels in one ear had been glued in. While this discovery did not indicate any effort to defraud, but merely a zealous attempt upon the part of the exhibitor to retain his entry intact, the judges promptly disqualified the entire entry, and the championship on ten ears of white was awarded to J. T. Henderson & Sons, Shelbyville, Ky. The Henderson entry was placed second to the yellow corn shown by Short for grand championship honors. The glue incident was generally regretted, because the white entry was conceded to be one of the very best, if not the best, ten-ear entry ever shown at a national show. This is no disparagement of the yellow corn which captured the honors, but merely the statement of a fact which made the disqualification particularly unfortunate. Complete awards on corn were as follows:

Ten Ear Awards—Dent

Central Zone.—White, J. T. Henderson & Son, Shelbyville, Ky.; yellow, Charles Short, Greenburg, Ind.; mixed, G. A. Brown, Franklin, Ind.

Northern Zone.—White, N. R. Raessler, Beloit, Wis.; yellow, N. R. Raessler; mixed, Chris Stoen, Bereford, S. D.

Eastern Zone.—White, Josiah Massey, Chestertown, Md.; yellow, Burton Bayard, Waynesburg, Pa.; mixed, D. M. Landis, Lancaster, Pa.

Southern Zone.—White, G. T. Buford, plane, Va.; mixed, G. L. Fentress, Sansaba, Tex.

Pulaski, Tenn.; yellow, B. A. Rucker, Dela

Western Zone.—No samples entered.

National Sweepstakes.—White, J. T. Henderson & Son; yellow, Charles Short; mixed, C. A. Brown.

Grand Champion (winner Indiana trophy) —Charles Short.

Single Ear Awards—Dent

Eastern Zone.—Pucey Cloud, Kennett Square, Pa.

Central Zone.—Joe Helms, Richmond, Ind.

Northern Zone.—N. R. Raessler, Beloit, Wis.

Southern Zone.—Henry Manteke, News Ferry, Va.

Western Zone.—No entries.

Grand Championship (winner Kellogg trophy).—Joe Helms.

Ten Ears—Flint

Northern Zone.—Geo. J. Frederick, Brooklyn, Mich.

Eastern Zone (Second Grand Championship).—James M. Moore, Bethlehem, Pa.

Single Ears—Flint

Northern Zone.—Geo. J. Frederick, Mich.

Eastern Zone (Second Grand Championship).—N. I. Bowdistch, Framingham, Mass.

A full report of show will be published next week.

HIGHWAY DEPARTMENT CHALLENGED TO DEBATE

The legislative committee of the Pennsylvania State Grange met in Harrisburg January 24 and 25, to consider plans for pushing grange legislation. The road question was considered, among others, and as the positions taken by the Highway Department and the grange upon the subject of bonding the state for road improvements are so decidedly opposite, it was thought best to come together, if possible, and discuss the question at length. Accordingly the grange issued a challenge to the Highway Department for such a debate. It was requested that a reply be made by February 1. At this time, nothing has been heard from the department. The grange is giving the friends of the bond issue a fair opportunity to present all of their arguments and place the issue squarely before the people. A refusal to accept the challenge can only be construed as an admission of no logical arguments to present, or a fear of having those arguments overturned.

STATE CAPITAL NEWS

Pure Seed Bill.—Early action is expected on a pure seed bill, designed to safeguard the farmers from frauds in the sale of seeds. Under the terms of the bill it will be unlawful to sell or offer for sale any seeds of timothy or other grasses or any clovers or alfalfa or mixtures which shall contain more than 5 percent of oxeye daisy, wild mustard, wild carrot, wild radish, horse nettle, sedge plant, brush bindwood, Canada thistle, Russian thistle, crab grass, curled dock, yellow or sour dock, narrow-leafed or buckthorn plantain, broad-leafed plantain, wild onion or nodding garlic, clover dodder or flax dodder. The Secretary of Agriculture is charged with the enforcement of this act. The penalty for violation is made from $10 to $20 fine, and for second offences, $100.

Licenses for Commission Men—An act presented by Representative George W. Williams, of Tioga County, provides that every person, firm or corporation selling agricultural products on commission must take out a license from the Department of Agriculture at a cost of $10 and give a bond for $2,500. These licenses are to hold for one year, and when any person has consigned products to a licensed commission man or firm and not been paid within 30 days, or such time as stipulated in the contract, he can have recourse to the bondsman for recovery. The penalty for engaging in the business without a license is made a fine of not more than $1,000 .

State Fair Bill.—Bills to establish a State Fair Commission are now before both houses. In addition to having the cordial endorsement of the Governor and Secretary of Agriculture, the measure has been backed by a strong statement from the National Secretary of Agriculture, and has numerous friends among the members of the legislature. A number of favorable petitions have been received, and it will have the support of men interested in local fairs. The bill carries an appropriation of $500,000, and that is about the only question over it. Until the financial program is worked out, and the fate of the new taxation measures made known, it will be impossible to figure out what will become of the appropriation. The question of a site has not entered into discussion of the project, that being left until after the commission is created by common consent.

Grade Crossings.—All of the public service commission bills drafted thus far give the commission explicit powers to abolish grade crossings in city or country, in case proof is established that they are dangerous. A bill creating a commission with large powers would be followed by speedy removal of some death traps in rural districts.

Provide for Platforms.—Another railroad bill which stands an excellent chance of being enacted provides that railroads must erect platforms at all stations. In many parts of the state the stations are without platforms, altho much used for the handling of dairy cans, produce and other farm freight.

Conference on School Bills.—Members of the State Board of Education will meet here on February 9 for discussion of the proposed school legislation, including the plan to furnish aid to rural districts so that they can give children the minimum term of schooling for a year. The recommendation that the state appropriation for schools be increased to $20,000,000 a year is a matter of revenue now. Most of the members are favorable to it, but whether the state can stand it remains to be seen.

Road Legislation.—Three important road bills are now before the legislature, one being the resolution proposing the $50,000,000 bond issue for roads which, if passed this session, will go before the people. The others are establishing a procedure whereby the state can secure turnpikes on the lines of main highways and for return of money from automobile licenses to the state highway department for road purposes. A bill to provide cash for the payment to townships of the dirt road allowance is in preparation. It will call for $2,000,000, but passage with that sum is considered unlikely, unless the outlook for the bond issue is certain.

Game Bills.—There is no lack of game bills for this session, and some of them seem to be filled with the same sort of combustible material as in former years. The bill to extend protection to game birds because of the services rendered in destroying insects is opposed because of the predatory habits of the birds, while a pitched battle over the hunters' license bill is imminent. Many petitions in favor of the measure are being prepared, while remonstrances promise to be numerous. The committee on game will give hearings on this bill, which would require every hunter to pay $1 for a license, the money to be used for the extension of the game protection and propagation work of the State Game Commission. What seems to be needed is a general codification of the game laws instead of continual changes.—Hamilton, Harrisburg, February 3.

NEW YORK LETTER

To License Commission Merchants.—Hon Seth Low, of New York, Dean L. H. Bailey and Senator F. N. Godfrey appeared before the committee on agriculture of both assembly and senate last week to support Senator Roosevelt's measure to require commission merchants to take out a license and give bonds and put themselves under the supervision of the agricultural department. Dean Bailey said that the marketing of produce is a public service process, and the people have a right to regulate it. Senator Godfrey said that the provision requiring the commission men to furnish the names of purchasers of produce was the really important feature of the bill.

Grange Insurance Company.—The Dutchess and Columbia Fire Relief Company issued 580 policies last year, and deducting those canceled and expired, the total number of policies now is 2,862 and the total amount of insurance carried is $7,108,260. Losses last year were $26,000, which is larger than usual. Covering a period of 15 years, the average assessment per $1,000 is a little over $1.92.

The Highway Laws.—There may be some radical changes in the road laws of the state this year. These proposed changes relate to the election of town superintendents for a period of four years, instead of two, and making them subject to removal; to have the

e aid in building bridges; and to author- towns to spend $1,500 instead of $500 as for road machinery.

New Bureau Proposed.—A bill now be- the legislature provides for the estab- ment of a bureau in the agricultural de- tment for the supervision of co-operative ociations, the head of the bureau to receive alary of $3,000 a year. Part of his duties be to assist in the development and or- ization of these co-operative enterprises.

ome Recent Agricultural Bills.—Among more important of the agricultural bills before the legislature are the following: establish a school of agriculture at Cook demy, in Schuyler County; to appropriate 0,000 for the erection of an administra- and demonstration building at the state icultural experiment station at Geneva; to ropriate the sum of $250,000 for build- for the state college of forestry at Syra- e; to establish a state school of agricul- on Long Island and making appropria- therefor of $90,000; to amend the pub- health law relating to cold storage. The named bill is very important, in that it es several changes in the existing law. imits the cold storage period for eggs, but- flesh, fowl or fish to three months, and other article used for food to a period not er than six months. It also makes it un- ful for anyone engaged in the cold storage iness to receive any fowl from which the d or feet have been removed, or any fish n which the head shall have been removed, pt salted or cured fish. The penalty for violation of the law is not less than $500 one year imprisonment or both.—New ker.

COUNTY NOTES

Pike Co., Pa. (N. E.), Jan. 20.—Mild rainy. Cows, $25@40; horses, $100 00. Crops good. Corn, 56c; rye, ; wheat, $1; oats, 35c; potatoes, 50c; , $15 ton. No farm work being e now, except getting things ready commence in the spring.—Rupert P. is.

Fayette Co., Pa. (S. W.), Jan 18.— rm and wet; but very little snow month. Live stock doing well, con- ering muddy yards and fields. eat and rye are growing fine. The y late-sown wheat is picking up t. Wheat, $1; oats, 50c; corn, 65c; , 80c; hay, $20; straw wheat, 40c e; oat straw, 45c; steers, 6@7c; fat s, 4@6c. Farm work goes slowly on ount of so much rain. Some plow- done, and some are preparing to ay fruit trees soon. Spraying is e to stay.—Samuel A. Harris.

Mercer Co., Pa. (N. W.), Jan. 18.— rm and rainy. Chickens, 10c lb.; s, 27c doz.; butter, 28c lb.; hogs, ssed, 8c lb.; apples, 50c bu.; pota- , 50c bu. Markets dull. Slow sale most farm products.—A. K. De nce.

Juniata Co., Pa. (C.), Jan. 18.— ather warm and wet. No snow. ck in good shape and healthy. eat looking well. Wheat, $1; corn, ; oats, 40c; hay, $12 to $14; beef tle, 5@7c; pork, 9c dressed; chick- 10c; eggs, 25c; butter, 41c. Not h doing,owing to wet, soft weather. D. B. Esh.

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In a letter from Lunt-Moss Co., 37 Warren Street, New York City, who have been advertising water supply systems, they write: "We will likely increase the size of our advertisement about March 1st, as the results from our advertising in Pennsylvania Farmer have been very successful. We note that the replies are from a class of people desiring first-class outfits and actual buyers."

Use KEROSENE Engine Free!

Amazing "DETROIT" Kerosene Engine shipped on 15 days' FREE Trial, proves kerosene cheapest, safest, most powerful fuel. If satisfied, pay lowest price ever given on reliable farm engine; if not, pay nothing. No waste, no evaporation, no explosion from coal oil.

Gasoline Going Up!

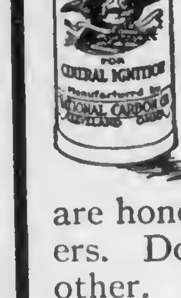
Gasoline is 9c to 15c higher than coal oil. Still going up. Two pints of coal oil do work of three pints gasoline.

Amazing "DETROIT"

—only engine running on coal oil successfully; uses alcohol, gasoline and benzine, too. Starts without cranking. Only three moving parts—no cams—no sprockets—no gears—no valves—the utmost in simplicity, power and strength. Mounted on skids. All sizes, 2 to 20 h. p., in stock ready to ship. Engine tested before crating. Comes all ready to run. Pumps, saws, threshes, churns, separates milk, grinds feed, shells corn, runs home electric lighting plant. Prices (stripped), $29.50 up. Sent any place on 15 days' Free Trial. Don't buy an engine till you investigate money-saving, power-saving "DETROIT." Thousands in use. Costs only postal to find out. If you are first in your neighborhood to write, you get Special Extra-Low Introductory price. Write! (138)

Cylinders cannot carbonize

Detroit Engine Works, 347 Bellevue Ave., Detroit, Mich.



Would you hire a lazy man? No, you want a worker.

PATENTED COLUMBIA BATTERIES

are honest, hard workers. Don't accept any other. You deserve COLUMBIAS and will get them if you insist.

Cost No More; Last Longer

For sale by all good dealers

National Carbon Co.
Cleveland, Ohio
Factories in U. S. and Canada
Fahnestock Connections without extra charge.

1847 FRUIT TREES 1913

Wiley's Better Trees in the end cost less. **SUGGESTIONS** on choice of varieties for various localities. Pruning, spraying, etc., etc., issued in booklet form free with catalog. Send for it now.
H. S. WILEY & SON, Alden St., CAYUGA, N. Y.

Cut Down Upkeep

By R. E. Olds, Designer

I have built cars for 26 years—60,000 of them.

But of all I have learned, nothing else compares with these ways for cutting upkeep—shown in Reo the Fifth.

The Final Cost

The buyer sees just the car's first price. But the vital thing is the after cost.

That may be little or it may be much. It depends on the builder largely. And the difference to you, in the course of five years, may be $1,000.

How I Reduce It

One big item is tires.

In Reo the Fifth I cut this cost by using tires 34x4. They cost $60 per set more than tires often used on a car of this weight. But they save many times that in tire bills.

I use in this car 15 roller bearings —11 Timken, 4 Hyatt. They cost five times as much as common ball bearings. But they do not break.

I use 190 drop forgings, at twice the cost of steel castings. But drop forgings don't have flaws.

Margin of Safety

Axles and driving parts should show very large over-capacity. I build them all to stand the tests for a 45 h. p. car. That leaves enormous margin.

I have all steel made to formula. Then I analyze each lot twice.

For testing my gears I use a crushing machine of 50 tons' capacity.

I use 7-leaf springs, two inches wide. And I test them for 100,000 vibrations.

Each engine is tested for 48 hours —20 hours on blocks, 28 hours in the chassis. I employ unusual tests.

Each car in the making gets over 1,000 separate tests and inspections.

Costly Items

I use a $75 magneto to save ignition troubles. I doubly heat my carburetor, for low-grade gasoline. I use a centrifugal pump, not a syphon. That adds about $10.

I use 14-inch brake drums.

I give each body 17 coats, so the finish will endure. I use the best genuine leather in upholstering. Also the best curled hair.

I am using flush electric dash lights in place of the old-style lamps.

All these things are costly. Yet I supply them, through factory economy, in a wonderfully low-priced car.

A car without them is likely to cost five times as much for upkeep. There may be costly repairs, and frequent.

I never would buy a lesser car. Therefore, I never shall build one.

Our $100 Control

Here is one feature worth $100 which costs not an extra penny.

It's the Reo center control. All the gear shifting is done by moving one little handle only three inches in each of four directions. It is as simple as moving the spark lever.

The driver sits on the left hand side, as in the latest high-priced cars. And this control lever is at his right hand.

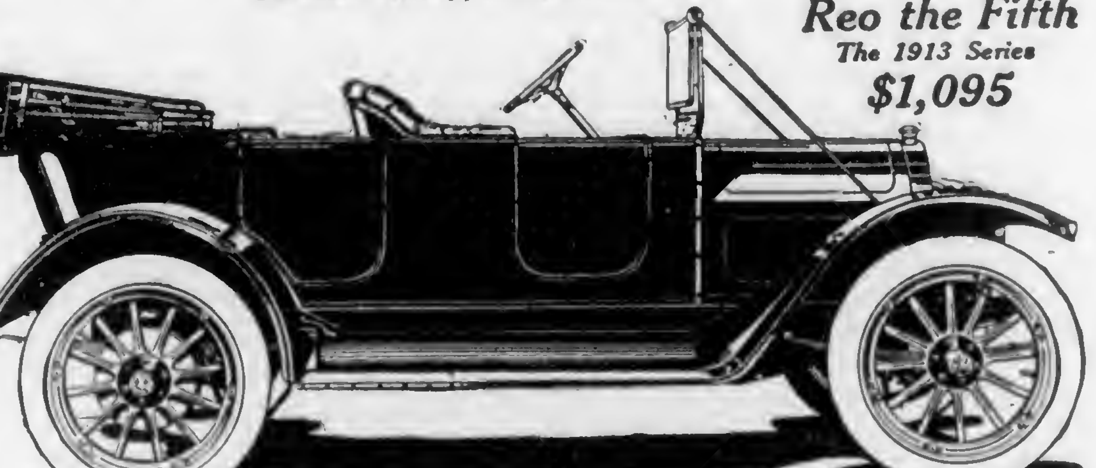
Both brakes are operated by foot pedals. There are no brake levers, so both front doors are clear.

A car in these days should have these modern features.

Sold by 1,000 dealers. Write for our 1913 catalog and we'll tell you the nearest show-room.

R. M. Owen & Co., General Sales Agents for **Reo Motor Car Co., Lansing, Mich.**
Canadian Factory, St. Catharines, Ont.

Reo the Fifth
The 1913 Series
$1,095



30-35 Horsepower
Wheel Base—112 Inches
Tires—34 x 4 Inches
Center Control
15 Roller Bearings
Demountable Rims
Three electric lights
190 Drop Forgings
Made with 5 and 2 Passenger Bodies

Top and windshield not included in price. We equip this car with mohair top, side curtains and slip cover, windshield, gas tank for headlights, speedometer, self-starter, extra rim and brackets—all for $100 extra (list price $170).

TIGHT BINDING
INTENTIONAL SECOND EXPOSURE

Grange

This department is conducted by R. P. Kester, Lecturer of Pennsylvania State Grange. Notes, queries, comments and news of grange work are invited from readers. Obituary notes and news of purely local interest can not be used. Address all communications for this department to R. P. Kester, Grampian, Pa.

EQUITABLE TAXATION

(Condensed summary of talk given by State Grange Secretary J. T. Ailman before tax hearing at Pittsburgh.)

I have the honor to speak for some 70,000 organized farmers and, in a wider sense, for the more than 200,000 farmers of the state. I am sorry that I am not supported by a room full of my fellow farmers. This is not because our people are not interested in the subject, but because they are at home working so hard to make money enough to pay the taxes that they have neither time nor money to come here.

The principle that personal and corporate property should produce the state revenues and that real estate alone should bear the burden of local taxes is nowhere else so rigidly adhered to as it is in this state. The consequence is that our farms and homes are more heavily burdened than any others in the Union. Nor is this without disastrous effects on our business. The manufacturers warn you that if you tax them you will drive them from the state. Just where they will locate I do not know, for wherever else they go they will make the acquaintance of the tax collector. We do not want to lose them and should be sorry to see them go, but, if from their hordes of wealth, they are unwilling to pay their share for being protected, we will bid them a sad farewell. Because we are paying our taxes and theirs, too, our farmers are being driven from the state. In the last decade 19 rural counties lost in population. Others were saved from net loss only because they had large towns within them. More than one hundred thousand people left the farms of the state with no one to take their places.

Farm values have increased here nothing like they have in all states west of the Alleghenies. There they have more than doubled in value in the last 20 years. Here they have little more than held their own. Yet here we raise more to the acre than they can and have better markets at our door.

Yet you men of the town complain of the high cost of living and blame the farmer for getting the lion's share. The fact is that the farmer is more the victim than the beneficiary of present conditions. Not only does the tax gatherer rob him, but the staples of the farm are not now and have not for years been bringing high prices, while farm machinery and almost all other farm supplies have advanced at least 50 percent and farm labor has doubled in cost.

In discussing taxes the city man and the city papers usually speak of the state revenues as if they were the only burden. The fact is that it takes fully three times as much money to support the local governments as it does the state, and the additional fact can not be too strongly emphasized that personal and corporate property, from which the state derives its revenue, is worth fully twice as much as real estate, the only source of local revenues. Thus the farm and the home pay fully six times as much tax on the dollar as does the corporation. No wonder that farms are not a particularly attractive investment here.

Our friend this morning asked, "Why tax manufacturers or otherwise increase the state revenues? The state is now getting more money than it needs, hence the rush for jobs and the raid of all kinds of charities on the state treasury." He even seemed to think that the money given to the public schools was an unjust burden on the corporations. We are rather startled at such a position, and while emphatically denying its correctness, we demand that one man's dollar shall bear the same share of the burdens of government as the dollar of another, no matter where invested. We farmers are driven to take this stand that either the corporations must pay more money into the state treasury to be appropriated to the local communities or they must submit to local taxes. Some six thousand farmers are coming into the granges of the state each year, and it will not be long before we will be in a position to demand justice.

Instead of debating the question whether the present school appropriation is right, we now demand that the state pay the entire cost of the public schools, or, at least, the minimum salaries of the teachers for the minimum term and relieve local taxation to that extent. Not only this, but we demand more money for public roads.

As a member of the last legislature I had the honor to introduce a bill providing that the minimum salaries of teachers should be paid by the state for the minimum term. The appropriations committee refused to report the bill because the revenues would not warrant it. Gentlemen of the committee, do you have the courage to recommend to the legislature to increase the taxes on the corporations to produce the money, and if you do, do you have any idea that the legislature would have the courage to pass it?

My friend, Senator Sproul, has immortalized himself by securing the passage of a bill providing for a splendid system of state roads, but instead of favoring the putting of a tax of a single mill on the corporations, which would provide all of the money needed to build the roads in a reasonable time, it is proposed to amend the constitution so that the money can be borrowed and the evil day of payment postponed. Would it not be good business to pay as you go, when you can do so without seriously burdening anyone? My thought is that your committee should recommend one additional mill on personal and corporate property for schools and another for roads. Even then, this class of property would be paying less than one-third of what real estate now pays. Do you have the courage to do it? No one will deny that it is just.

We farmers ask for no exemptions or special privileges. We demand only what the constitution promises, equality.

SCHOOL GARDEN WORK

The Department of Agriculture will soon issue an interesting publication entitled "Some Types of Children's Garden Work" in the public schools of the larger cities from Pittsburgh to the Pacific Coast. The bulletin is No. 252, Office of Experiment Stations. The introduction says:

School garden work has become so general within the past five years, and literature relative to the same so abundant, that facts of the nature furnished in earlier reports would be superfluous, viz., what to plant, the distance apart of the rows and of the seeds in the rows, and like detailed information. Teachers need now to view the garden from a higher plane—its relation to daily living, its effect upon character development, its place in the curriculum, and its relation to other subjects in the course of study. Therefore, in making this report such facts have taken a more prominent place than the ones that may be obtained from text-books.

The individual plat system and the young gardener, owner of all he raises, is the system in vogue east of the Rockies. West of the Rockies almost invariably the commercial side holds a place of importance equal with the cultivation, but the products are sold for the benefit of the school. Children are taught business methods thru the sale. The system of teaching agriculture used is always based on the best local practice, and is one that children can follow intelligently, but the products are always the property of the school.

Nowhere is there systematized garden instruction in the city graded schools. In a majority of places it is still a matter of choice with the principals. Until the necessity of a specialized instructor is felt the work will not be systematized. The educational value of garden instruction is too great to allow it to be a matter of choice with the teachers. There seems to be a fear among educators in official positions of burdening teachers and the course of study with new subjects.

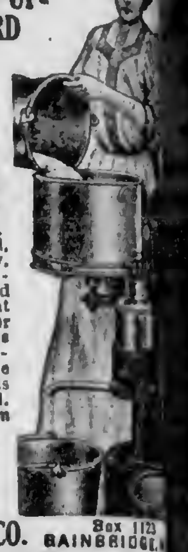
As our modes of living improve, the demand comes to the schools for practical methods dealing with the question of right living. It is safe to predict that popular demand will cause the replacement of some of our antiquated methods and subjects by systematized science lessons that will teach people how to lead more wholesome lives.

IMPROVING NEW YORK STATE FAIR

If the present plans are carried out, the State Fair grounds at Syracuse, N. Y., will present a decidedly changed appearance when the gates open to the 1913 exposition. At a recent meeting of the State Fair Commission it was practically decided that the race track should be moved this fall to a location paralleling its present position, but much farther to the rear of the grounds. It was also decided to erect a coliseum and a horse building, which will be connected with the new cattle building by covered pergolas. The new coliseum will be capable of enclosing an eighth of a mile track, on which all horses will be shown; and all the horse and cattle judging will be done therein instead of as now under tents about the grounds. The commission will ask an appropriation from the legislature at its next session for the above named structures.

Plans are being discussed for holding a 10 days' fair hereafter, and the subject will come up again at the meeting on the 17th of the present month. It is said that if these plans materialize, the horse show will be held at night and that the grounds will be brilliantly lighted by electricity. There is an unexpended appropriation of $5,000 available for this work of lighting the grounds.

There is assuredly need of the improvements mentioned, but we look upon the holding of the fair for 10 days and throwing its gates open evenings as experimental to a degree. The commission will hold an open meeting on October 17, at which time horsemen from various parts of the state will have opportunity to pass judgment on the plans which the commission have before them.—J. W. Darrow.



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FROST—PROO
PERMANENT
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3 Walls
—therefore 3 times as warm and 3 times as strong.
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$24 Buys the New Butterfly Jr. No. 1. Light running, easy cleaning, close skimming, durable. Guaranteed a lifetime. Skims 95 qts. per hour. Made also in four larger sizes up to 5 1-2 shown here.
30 Days' Free Trial Earns its own cost and more by what it saves in cream. Postal brings Free catalog folder and "direct-from-factory" offer. Buy from the manufacturer and save half. [12]
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NEW CATALOG DESCRIBING TH
GUARANTEED MONEY-SAVIN
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strongest built, simplest to put up and easiest opera on the market. Adjustable automatic take-up hoop continuous open-door front—air-tight door and pe manent ladder are some of the unusual features. Th International Silo Co., 118 Main St., Linesville, P

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The American Rush t Western Canada is Increas
Free Homesteads in the new Districts of Manitoba, Saskat chewan and Alberta, there are thousands of Free Homesteads left, which to the man making entry in 3 years' time will be worth from $20 to $25 per acre. These lands are well adapted to grain growing and cattle raising.
Excellent Railway Facilities
In many cases the railways in Canada have been built in advance of settlement, and in a short time there will not be a settler who need be more than ten or twelve miles from a line of railway. Railway Rates are regulated by Government Commission.
SOCIAL CONDITIONS. The American Settler is at home in Western Canada. He is not a stranger in a strange land, having nearly a million of his own people already settled there. If you desire to know why the condition of the Canadian Settler is so prosperous write to any of the Canadian Government Agents and send for literature, rates, &c., to
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ive Stock

EW YORK STOCKMEN MEET

e New York State Breeders' Asso
on is a body of men whose influ-
on the breeding interests of the
e should be large, and we believe it
In the face of the great decline in
bers of our live stock for the past
decades and more, it is evident that
thing must be done to renew in-
st in this branch of agriculture.
missioner Huson, in his opening ad-
s, pointed out the fact that the
y cow is the only one of the do-
tic farm animals that has increased
numbers in this state. Sheep
pped from 1,745,000 in 1900 to 930,-
in 1910; swine from 678,000 in 1900
66,000 in 1910; horses from 628,000
900 to 591,000 in 1910. However,
es have increased, except in the
of sheep. Thus, swine were
ued at $3,800,000 in 1900 and at
00,000 in 1910; horses, $48,000,000
1900 and $86,000,000 in 1910. But
ep have decreased in total value
$5,920,000 in 1900 to $4,830,000
910.

he speaker remarked on the fact
t last year New York imported
,000 horses from other states, and at
e price of $200 each, means that the
ate is paying $16,000,000 a year for
rses that we ought to be breeding
rselves. He further commented on
e necessity for breeding only the
st. He had caused an investigation
be made in 16 counties, and had dis-
vered that not one stallion out of 10
those counties that had been regis-
red was either standard bred or pure-
ed. There are too many scrubs in
eeding, and these must in time be
iminated so far as possible. This
ve rise to a lengthy discussion on
e legislation needed to bring about
better state of quality in the breed-
g of horses in the state. It appeared
be the consensus of opinion that
ere should be a law to forbid the
gistration of any animal that was
ot sound and in every way qualified to
eproduce its characteristics. The use
f grade stallions was deplored, as it
esults only in the production of in-
erior horses, which command a low
rice. A campaign of education for
etter breeding was deemed necessary.

Type of Farm Horse.—The meeting
lso discussed the type of horse which
he farmer should breed, with some-
hat varying opinions. The consensus
f thought seemed to be that the draft
nimal, weighing about 1,060 to 1,200
ounds was the most desirable for this
urpose. The importance of a good
am was emphasized by all. One
peaker said that five good mares can
e bought for $1,000. They ought to give colts enough to make $500 a year on the investment. The same speaker predicted that farm "chunks" that are now selling for $400 will cost from $600 to 800 in a very few years. A suggestion was made that those farmers who were interested in breeding draft horses should organize a club for the development of the business of breeding such animals.

"Fitting Animals for the Show."—This subject was discussed by M. S. Rye, of Preble. H. L. Wardwell, of Springfield Center, spoke particularly of fitting sheep for the show. However, he gave many practical hints on sheep breeding, advising the selection of the breed best adapted to your environment and then making a careful study of their characteristics. Select the ram with special care—he is half the flock. He advocated culling out each year 10 of the weakest and poorest animals and replacing them with 10 yearlings.

John Moore, of Woodville, Ont., discussed sheep raising in New York and asked, at the outset, how many farmers present were keeping sheep. Nine raised their hands. He thought that, with lambs selling at $9.65 per 100 lbs. in Buffalo, as they did a few days ago, it should offer an inducement for farmers to raise sheep. Mr. Wardwell corroborated a statement made by Mr. Campbell, relative to increased fertility on account of sheep, by saying that where he used to cut 75 loads of hay before keeping sheep, he now cuts 300.

Mr. C. A. Nelson, of Waverly, Ia., spoke on the advantages of breeding purebred stock. He did not favor raising the dual-purpose cow, which he said was usually good "to make tough beef." In one county in Iowa, where a few years ago there were no purebred cattle, there are now 20 herds. It was in that county that $7,450 worth of butter was produced per square mile.

The suggestion that a draft horse association be organized was promptly carried into effect, and E. S. Aiken, of Glens Falls, was made president. Its object will be to stimulate the raising of a better class of work horses and to secure legislation that will prevent the use of unsound stallions for breeding purposes. The organization has made a good start, and its efforts will be productive of good to the industry and to farmers generally.

Resolutions were adopted which favored a single association for registering various breeds of purebred stock in the country, and opposed government control of the purebred live stock industry. Another favored some changes in the stallion registration law. Commissioner C. J. Huson was re-elected president of the Association.—New Yorker.

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Once up—it will last a lifetime without needing repairs.
We have a 50 page illustrated book on silos and silage. Every stock owner should have it for its valuable feeding information. It contains articles by prominent writers, including Prof. Hugh G. Van Pelt. Sent FREE on request. Ask for catalog Q
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IONIA GIRL
I have started more breeders on the road to success than any man living. I have the largest and finest herd in the U. S. Every one an early developer, ready for the market at six months old. I want to place one hog in each community to advertise my herd. Write for my plan, "How to Make Money from Hogs." C. S. BENJAMIN, R.F.D.2, Portland, Mich.

Famous O. I. C.'s—Choice gilts and bred sows, and a fine bunch of Sept. pigs. Pairs not akin. S. Royer, Rushsylvania, Ohio.

Sunny Bank Farm Berkshires Both sexes; Masterpiece, Longfellow and Trueworth breedings Reasonable. Reg. free. A. F. Jones, Box 117, Bridgehampton, L. I.

Berkshire Bargains
I have three tried Registered Berkshire Sows—young and good, will farrow in March to my Masterpiece boar, that I have put into the Bargain Pen to make room for me and money for you.
W. F. McSPARRAN, FURNISS, PA.

LARGE BERKSHIRES—25 sows and gilts bred for Feb. Mar. and April farrow; young service boars, 40 fall pigs, both sex, no kin.
H. P. BAUGHMAN, Wadsworth, Ohio.

BERKSHIRES—Fall pigs and service boars. Stock and prices right. White Holland Turkeys $3.50, raised on farm range. W. A. Lothers, Peru Lack, Pa.

REGISTERED Berkshire Boar For Sale—Clearview Lad 163352, farrowed Mar 7, 1911. Sacrificed at $20 to avoid inbreeding. J. W. Dodge, Terra Alta, W. Va.

FOR SALE—Thorobred Berkshire Boar. Rivals Majestic Lee. Farrowed April 9, 1912. Enquire W. J. Gibson, Mgr. Treadway Farms, Willoughby, O.

Large Berkshire Swine. Registered High grade. Prices reasonable. Write HOME FARM, CENTER VALLEY, PA.

Registered Poland Chinas of approved breeding. A grand lot of early spring and fall boars. Twenty-five high classed sows of 1911 farrow will all be safe for early litters. This offering consists of prize winning ancestry. Write me for prices.
C. S. EPPLEY, ZANESVILLE, OHIO.

Large Type Poland Chinas—Service boars, sows bred to champion boars for March and April farrow. Fall pigs, either sex. Prices reasonable. L. C. McLaughlin, Pleasantville, Ohio.

REGISTERED POLAND CHINAS—Aged and yearling tried sows. Also a few gilts. All are bred for spring farrow. Prices right. J. H. BURKHOLDER, R. F. D. 9, Archbold, Ohio

Poland Chinas and Delaines. Well bred pigs and rams for sale. C. OWEN CARMAN, Box O, Trumansburg, N. Y

POLAND CHINA—Big type service boars, yearling sows, gilts bred for spring farrow also fall pigs. Prolific growthy smooth strain. F. A. Kinsey, Lakeville, O.

Fine Lot of Chester-Whites, All Ages FOR SALE. HARDIN BROS., Box 196, LIMA, OHIO.

Chester Whites—Choice registered stock of both sexes of serviceable age for sale. Write your wants. J. A. Hoak, Rt. 4, New Castle, Pa.

MULEFOOT HOGS
Oldest breeder in the State. Pedigreed stock for sale. SAMUEL JOHNS, Wilmington, Ohio. Sec. D.

Mule Foot Hogs at Auction. Sale Feb. 15, 1913. 50 bred gilts. Young stock for sale. Write for catalog. J. A. Williams, Rt. 6, Bx B, Eaton, Ohio.

DUROC JERSEYS Two show boars of spring farrow by Red Col, the 900 lb. prize winner. Yearling and gilts bred, price $30 and up. All cholera immune.
V. E. MICHAEL, Veterinarian, Yellow Springs, O.

Duroc Jerseys—Champion herd at W. Va., Pa., N. J. State fairs, 1912. Booking orders for spring pigs. R. B. Martin, Stouts Mills, W. Va.

DUROCS and Poland Chinas—35 bred sows for Mar., Apr. & May. Name breed wanted. 10 service boars, pedigreed fall pigs. O. P. McDowell, Plain City, Ohio

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DOGS—Broken Fox Hounds, Beagles and Rabbit Hounds, Coon Hound Pups, Collie Dog 2 years old, Collie Pups, Fox Terriers, Bull Terriers, Spaniels, St. Bernard Brood Bitch, St. Bernard Dog, Great Danes. In writing say just what you want. HARRY REEDER, THORNDALE, PA.

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WM. ARMSTRONG, WOOSTER, OHIO.

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LOUDEN MACHINERY CO.,
883 West Broadway,
FAIRFIELD, IOWA.

Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., Feb. 3, 1913.

Most of the butter receipts have been of unattractive stock, altho prices have held fairly steady. Egg receipts were light and prices advanced on all good grades. The poultry market was firm under a scarcity of stock.

Butter.—Western creamery, 38c; extras, 36c; firsts to seconds, 29@33c; special prints, 42@45c; near-by prints, 37@39c.

Cheese.—New York full cream, 18@18¼c; skims, 11@15c, according to quality.

Eggs.—Candled, 29@31c doz.; extras, 27c. Current receipts at $6.90@7.20 per standard case.

Poultry.—Fowls, 14@15c; old roosters, 11½@12c; spring chickens, 15@16½c; ducks, 16@17c; pigeons, 18@25c pair; turkeys, 19@20c.

Dressed Poultry.—Western fowls, 15@17c; roosters, 13c; chickens, 16@18c; turkeys, 20@23c.

Vegetables.—White potatoes, choice, 70@73c bu. Onions, 35@40c bu. Cabbage, $5.00@8.00 ton. Lettuce, $1.25@2.00 basket. Cucumbers, $2.75@3.50 basket. Celery, 25@50c bch. Spinach, 75c@$1.00 bbl. Kale, 25@35c bbl. Egg plant, $2.25@2.75 box. String beans, $2.00@3.00 bu. Peas, $2.00@4.00 basket. Peppers, $1.50@2.25 carrier. Tomatoes, $2.00@3.25 carrier.

Fruit.—Apples, choice varieties, 25@75c hamper, $2.00@3.50 bbl. Cranberries, $5.00@8.50 bbl.; $1.75@2.50 crate.

Hay and Grain.—No. 1 timothy, new, 19.00@$19.50; No. 2, $16.50@17.50; No. 3 do., 14.00@15.00. No grade, $10.00@12.00. Clover, mixed, No. 1, $15.50@16.00; No. 2 do., $13.50@14.50. No. 1 tangled rye straw, $13.50@14.00; No. 1 oats straw, $11.00@11.50. New shelled corn, as to quality, 53@57c; new cob, 58c per 70 lbs. No. 2 red wheat, 99c@$1.00; No. 3 do., 97@98c. No. 2 white oats, 40@40½c. Standard white, 39@39½c; No. 3 white, 38@38½c.

Hides and Skins.—Steers, abattoir, 17@17½c; do. country, 14@14½c. Cows, abattoir, 15@15½c; do. country, 13c. Bulls, abattoir, 13c; do. country, 11c. Calf skins, Nos. 5 to 12 and up, $1.35@2.45; do. green, 13@14c lb.

Seeds.—Timothy, $3.15@3.25 bu.; clover, white, $25; do. crimson, $6.25; do. mammoth, $14.50; do sweet, $13.00; do. alsike, $13.25; red top, per bu., $13.50; alfalfa, $7.00@10.00; Canada field peas, $2.35; vetch, $8.50; rye, winter, $1.35; spring, $2.25; soy beans, $3.25; barley, $2.50; buckwheat,, $1.50; cowpeas, $3.00@3.25; millet, $1.90@2.75; oats, $1.20; wheat, $1.70@2.00.

Coffee.—Rio, 7s, 13½c; Santos, 4s, 15½c. Mild Coffee—Cordova, 15¾@18c.

Provisions.—City beef, smoked and air-dried, 22@23c. Beef hams, 31@33c. Pork, family, $21.00@22.00; Hams, cured, 13¾@14⅛c; skinned, 13@14¼c; smoked, 15½@17c. Other hams, smoked, city cured as to brand, 16@18c. Picnic hams, 11¼@11½c; do. smoked, 13@13½c. Bellies in pickle, 13½@14c. Breakfast bacon, as to quality, 16@20c. Lard, refined, 11⅛@11½c; do. in tubs, 11¼@11⅜c; do kettle rendered, 11@11½c. Tallow, prime city, 6⅞@7c; do. country, 7c; do. dark, 5¾c, do. cakes, 7¼c.

Sugar.—Cut loaf, $5.15 cwt.; cubes, $4.60; powdered, $4.45; granulated, $4.35; standard granulated, $4.40; crystal A, $4.35.

Flour.—For 196 lbs., in wood, winter clear,, new, $4.10@4.30; do. straight, new, $4.50@4.75; favorite brands, $5.00@5.35. Rye flour, Penna., $3.60@3.75.

BUFFALO PRODUCE

Buffalo, N. Y., Feb. 3, 1913.

Butter.—Active and firm. Creamery choice, 34@35c; choice dairy, 30@31c.

Cheese.—Quiet and steady. Fancy, 18c; good, 17@17½c.

Eggs.—Steady. State, candled, 27@28c; storage, 20@23c.

Dressed Poultry.—Active. Turkeys, per lb., 23@25c; fowls, fancy, 14@17c; chickens, 15@18c; old roosters, 12@13c; ducks, 20@22c; geese, 17@18c.

Live Poultry.—Active. Chickens, 15@18c; ducks, 18@19c; geese, 15@17c; turkeys, 19@21c.

Vegetables.—Potatoes, firm. Home-grown, 65@68c bu. Cabbage, $1.50@2.50 per 100. Onions, 65@80c bu. Beans, green, $2.00@3.50 hamp. Turnips, 75@80c bbl. Celery, 40@50c doz. Lettuce, 40@70c.

Beans.—Quiet, steady. Marrow, fancy, $3.30@3.40; medium, $2.50@2.60; red kidneys, $2.75@3.00.

Fruits.—Apples, $2.25@3.25 bbl.; 50@75c bu.

Honey—Firm. No. 1 fancy, 17c; No. 2 new, 14@15c; dark, 12c.

Hay.—Weak. Timothy, choice, on track, $17.50; No. 1 do., $16.50; No. 2, $15.50; light mixed, No 1, $15.50; rye straw, $10.00@11.00; oat and wheat straw, $9.00@13.00.

Feed.—Steady. Spring bran, $22.00 ton. Standard mids., $22.25. Corn meal, $27.00. Gluten, $29.50. Hominy, $24.50.

BALTIMORE PRODUCE

Baltimore, Md., Feb. 3, 1913.

Under a somewhat greater demand, butter advanced a shade. The egg supply was equal to the demand, and prices remained unchanged. Receipts of live poultry were mostly of unattractive stock. Prices advanced under a greater demand, and the market is firm.

Butter.—Creamery, fancy, 35@35½c; do., choice, 33@34c; prints and blocks, 34@37c. Maryland and Penna. rolls, 20@22c; prints, 20@21c. Process, 25@27c.

Cheese.—Flat, 17½c; Daisy, 18@18½c.

Eggs.—Md. and Penna., firsts, 23c; western, 23c; southern, 21@22c.

Live Poultry.—Hens, 16@17c; chickens, 18@19c; old roosters, 9@10c. Turkeys, 21@22c. Ducks, 16@17c. Geese, 14@15c. Guinea fowls, 30@50c each.

Dressed Poultry.—Turkeys, 23@24c; chickens, 18@19c; roosters, 10@11c; ducks, 17@20c; geese, 11@17c.

Vegetables.—Potatoes, white, 55@60c bu. Sweets, $2.25@2.75 bbl. Cabbage, $4.00@5.00 per ton; Danish, $8.00@9.00. Onions, 40@50c bu. Lettuce, 20@35c basket. Egg plant, $2.00@2.50 crate. Peppers, $1.50@2.00 crate. Squash, $1.50@2.00 basket. Spinach, 30@40c box. Cucumbers, $4.50@5.00 basket. Beans, green, $2.25@2.75 basket. Celery, $3.00@4.00 crate. Turnips, 15@20c box. Cauliflower, $2.50@2.75 bbl. Horseradish, $1.50@1.65 box. Beets, 40@45c bu.

Fruit.—Apples, new, $2.00@3.50 bbl.; 50c@$1.00 bu. Cranberries, $8.00@9.00 bbl.

Grain.—Wheat.—No. 2 red western, $1.07⅝; contract, $1.06¾. Corn, new, 54½c; contract, 54¼c. Oats, No. 2 white, 39c; standard white, 38c; No. 3 white, 37c. Rye, 55@65c.

Hay and Straw.—No. 1 timothy, $18.50@19.00. No. 2 timothy, $17.00@17.50; No. 3 do., $14.00@16.00. Choice mixed, $16.00@16.50. No. 1 clover, $13.00@13.50. No. 2 do., $11.00@12.50. No. 1 tangled rye straw, $12.50@13.00. No. 1 oat straw, $9.00@10.00. No. 1 wheat straw, $8.00@9.00.

Millfeed.—Spring bran, 23.50@24.00. Middlings, flour to white, $26.00@28.00; western middlings, $24.00; city mills mids., $24.00@24.50.

YORK PRODUCE MARKET

York, Pa., Feb. 3, 1913.

The markets were unchanged for the week, except on butter and eggs. So far, butter has held its own, but the stock remaining unsold shows that it will soon drop. Eggs are uncertain, ranging from 19 to 24 cents per dozen, with limited purchases.

Butter.—Country, 28@32c; separator, 34@35c. Milk, 6c per qt.

Eggs.—20@23c.

Poultry.—Hens, 12@13c. Dressed poultry, 40@70c.

Vegetables.—Potatoes, 10c half peck; 40@70c bu.; cabbage, 2@4c each; lettuce, 5@8c; beets, 3@5c bunch, 10c per ½ pk.; radishes, 3@5c; turnips, 10c per ½ pk.; onions, 9@10c per ½ pk.; lima beans, 12c qt.; soup beans, 10c qt.; celery, 3@7c stalk; sweet potatoes, 10c per ½ peck.; spinach, 10c per ½ peck; parsnips, 10c per ½ pk.; sauer kraut, 5@7c qt.; lard, 12@14c lb.; corn meal, 5@6c qt.

Fruit.—Apples, 10@25c a half peck; grapes, 10@15c ½ pk.; pears, 10@15c per ½ pk.; chestnuts, 15c qt.; walnuts, 15c per ½ peck.

Retail Grain Market.—Wheat, $1.10; corn, 68c; oats, 50c; bran, $1.35 a cwt.; rye, 78c; middlings, $1.55 a cwt.

Wholesale Grain Market.—Wheat, $1.04; corn, 57c; oats, 40c; rye, 68c.

NEW YORK PRODUCE

New York City, Feb. 3, 1913.

Butter is firm and higher under greater demand for fresh creamery grades. The demand for eggs is fair, but not especially active. Prices are about at last week's figures. Trading in poultry is not very heavy, and receipts are fully equal to the demands. Prices unchanged. Prices on fruits and vegetables remain about steady, except on onions, which are very plentiful and low.

Butter.—Creamery firsts to extras, 32@37c; thirds to seconds, 26@31c; factory, 18@23½c; state dairy, 23@34c; packing stock, 17@21½c; process, 19@26½c.

Cheese.—Whole milk special, 18c; do., common to fancy, 16@17¾c; skims, 8@14¾c.

Eggs.—State and near-by, 27@31c; fresh gathered, 23@27c; mixed, 24@26c; refrigerator, 12@19½c.

Dressed Poultry.—Turkeys, dry, 19@23½c; chickens, Penna., 15@25c; fowls, 14@17c; old roosters, 13½c; ducks, 16@19c; roasters, 19@20c.

Live Poultry.—Fowls, 12½@14c; chickens, 12½@13c; roosters, 10c; ducks, 14@15c; geese, 14c.

Grain.—Easy. Wheat, No. 2 red, $1.09½; No. 1 Northern, $1.00½. Corn, 56¾c. Oats, standard white, 39c.

Vegetables.—Potatoes, state, $1.75@1.85 per 165-lb. bag. Cabbage, $3.00@4.00 ton; do. Danish, $6.00@8.00 ton. Green beans, $1.50@3.50 basket. Carrots, $1.00@1.75 bag. Cucumbers, $1.00@1.50 dozen. Lettuce, 25c@$1.00 basket. Squash, $1.50@2.00 bbl. Celery, $1.50@4.50 case. Horseradish, $3.00@4.50 cwt. Parsnips, 75c@$1.00 bbl. Turnips, $1.00 bbl.

Fruit.—Apples, $1.75@4.00 bbl., according to variety. Pears, 50c@$1.10 basket. Cranberries, $6.00@10.00 bbl.

WILMINGTON PRODUCE

Wilmington, Del., Feb. 3, 1913.

Market quotations are mainly steady with those of last week. Both butter and eggs hold up well in price, but demand is rather limited.

Fruits.—Apples, 50@75c basket; $2.75@3.50 bbl. Grapes, $4.00@6.50 keg.

Vegetables.—Potatoes, 80c bu.; $2.00 bbl. Cabbage, 75c@$1.00 bbl.; 25c basket. Onions, 40c basket. Celery, 25@50c doz. Spinach, $1.25 bbl. Sweet potatoes, 75c basket; $3.00@3.75 bbl. Kale, $1.00 bbl. Carrots, 10c ¼ pk. Lettuce, $1.50 basket.

Poultry.—Chickens, live, 15@16c; do., dressed, 17@19c. Ducks, 14c lb.; dressed, 18c.

Eggs.—28@30c; storage, 22@25c.

Butter.—Creamery, 30@33c; prints, 38@45c.

WASHINGTON PRODUCE

Washington, D. C., Feb. 3, 1913.

Eggs.—Near-by, fresh, per dozen, 22c; southern, per dozen, 22c.

Cheese.—New York, new, per pound, 19c; flat, 19c.

Butter.—Best prints, per pound, 37c; tub, 36c; process, 27@28c; undergrades, 25c.

Live Poultry.—Hens, per lb., 16c; roosters, 10c; springers, 18@20c; turkeys, 20@22c; geese, live, 12@15c; ducks, 16@18c.

Vegetables.—Potatoes, bbl., $1.25@1.50; 50@75c bu. Onions, 90c@$1.00 per 100-lb. bag. Lettuce, per bas., 75c@$1.50. Beans, $1.50@2.50 basket. Peppers, per crate $1.00@1.50. Egg plants, per box, $1.50@3.00. Squash, per bbl., $1.25@1.75. Beets, $1.50@2.00 per 100 bchs. Mushrooms, per lb., 25@40c. Carrots, 1½@2½c bch. Cabbage, $1.50@2.50 bbl. Radishes, 50c@$1.00 per 100 Cauliflower, $1.50@2.50 crate. Apples, $1.50@4.50 bbl.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., Feb. 3, 1913.

The cattle market was more or less dull under greater receipts and unfavorable weather conditions. Good steers, however, were firm.

	Beef Cattle	Sheep and Lambs	Hogs
Total for week	4,724	10,560	5,185
Previous week	5,023	13,707	6,061

Best steers	$8.25@8.40
Choice steers	8.00@8.10
Good	7.75@7.87½
Medium steers	6.75@7.25
Common steers	6.25@6.75
Bulls	4.25@6.50
Fat cows	5.00@6.00
Thin cows	2.75@3.25
Milk cows	40.00@65.00

Veal calves are steady.

Best calves	$11.00@11.50
Good to choice do.	10.00@10.50
Medium	7.00@8.00
Common do.	6.50@6.75
Thin do.	5.00@8.00

Sheep and lambs were steady at unchanged figures.

Extra wethers	$6.00@6.25
Choice wethers	$5.75@6.00
Good wethers	5.25@5.50
Common to medium	3.00@5.00
Ewes, fat	4.75@5.25
Extra lambs	9.25@9.50
Good to choice do.	9.00@9.25
Common to medium	5.75@8.25

Hogs are a shade stronger, westerns selling at $11.00.

City Dressed Stock.—Choice classes of dressed meat are steady. Trade is normal. Steers, 10@13c; heifers, 9@12c; cows, 7½@10½c. Veal calves, 14@16c; country dressed calves, 13@14c; extra do., 15c. Sheep, 9@10c; extra wethers, 11c. Spring lambs, 14@15c. Hogs, 11c.

PITTSBURGH LIVE STOCK

Pittsburgh, Pa., Feb. 3, 1913.

Today's cattle receipts were 105 loads. The market was fairly active, a few fancy beeves ruling 10 to 15 cents higher than last week, while others ruled steady.

Good to choice	$8.30@8.65
Good, 1300 to 1400 lb.	8.10@8.30
Medium to good, 1200-1300 lb.	7.60@8.00
Tidy, 1050-1150 lb.	7.65@8.00
Fair to medium, 900-1100 lb.	7.00@7.50
Common to good fat oxen	4.00@6.00
Common, 700-900 lb.	5.00@6.00
Common to good fat bulls	3.50@7.00
Common to good fat cows	3.75@6.50
Heifers, 700 to 900 lbs.	4.25@7.50
Bologna cows	3.75@4.00
Fresh cows and springers	25.00@80.00

Calves.—Receipts were 400 head. The market is 50 cents per cwt lower, but showed activity and a higher tendency at the close.

Heavy and thin calves	$5.00@7.50
Veal calves	7.50@11.50

Hogs.—Today's hog receipts were 60 double-deck loads. The market ruled 5 to 10 cents higher on pigs and light Yorkers than last week, but other grades were steady.

Prime heavy	$7.85@
Prime medium weights	8.15@
Heavy mixed	8.00@
Best heavy Yorkers	8.20@
Light Yorkers	8.25@
Pigs as to quality	8.00@8.25
Common to good roughs	6.60@7.00
Stags	5.75@6.25

The supply of sheep and lambs today was 15 double-deck loads. There was a fair demand and an active market, all best grades of sheep and lambs going 20 to 40 cents higher. Other grades were strong.

Prime wethers	$5.80@6.10
Fair mixed ewes and wethers	4.00@4.75
Culls and commons	2.00@3.00
Spring lambs	5.00@9.10
Good mixed	5.00@5.40

BUFALO LIVE STOCK

Buffalo, N. Y., Feb. 3, 1913.

Cattle receipts today were 110 loads. The market ruled 10 cents higher, with good prospects for the week.

Choice heavy steers	$8.35@8.75
Medium	7.65@8.25
Yearlings	7.25@8.25
Plain heavy	7.50@8.00
Handy butchers	6.75@7.15
Good to choice fat cows	6.00@6.75
Good to choice heifers	5.00@7.50
Butcher bulls	4.65@6.75
Feeders	5.50@6.50
Stockers	4.25@5.50
Cows and springers	45.00@80.00

Calf receipts today were 500 head. The market was active and steady.

Choice veals	$11.00@12.00
Light and thin	4.00@6.50

There were 60 cars of sheep and lambs on sale today. Cooler weather has helped the market, and both sheep and lambs are firm.

Choice lambs	$9.40@9.50
Poorer grades	6.00@6.50
Yearlings	7.00@8.00
Wethers	6.00@6.25
Ewes	5.00@5.50
Sheep	5.50@5.75

Today's hog receipts were 75 carloads. Prices worked down toward the close of last week but picked up today, and with cooler weather in prospect, the outlook for the week is good.

Heavies	$8.00@8.10
Mixed and medium	8.10@8.20
Yorkers	8.20@8.30
Light Yorkers	8.20@8.30
Pigs	8.25@8.30
Stags	5.50@6.75
Roughs	7.10@7.25

BALTIMORE LIVE STOCK

Baltimore, Md., Feb. 3, 1913.

Beef receipts for the week were 2,159 head. The market is steady.

Steers	$4.75@8.35
Heifers	4.25@6.75
Cows	2.00@5.40
Bulls	3.25@5.25
Fresh cows	$27.50@77.50

Sheep and lamb receipts were 2,651 head. The market is firm.

Sheep	$3.00@5.75
Lambs	6.50@9.30

There were 14,958 hogs on sale during the week. Market firm.

Light westerns	$8.25@8.50
Heavy to medium	8.00@8.25
Near-by	8.20@8.35
Pigs	7.00@8.00
Roughs	6.00@7.50

Calf receipts for the week were 312 head. The market is higher, with calves at $6.00@10.50.

NEW YORK LIVE STOCK

New York City, Feb. 3, 1913.

Calf receipts were 4,065 head. The market is irregular.

Steers	$4.75@8.65
Bulls	5.00@6.50
Cows	3.40@6.35

Dressed beef steady at 9½@12½c for native sides; $8.50@10.00 for light weights.

Calf receipts were 1,994 head. The market is steady to firm.

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terns	3.50@5.00

ressed calves are steady.

-dressed veals	14@19c
try-dressed veals	10@15½c

eep and lamb receipts were 9,625 head. p are steady and lambs higher.

	$4.00@5.50
p	2.50@3.50
s	7.75@9.50
bs	6.00@7.00
s	6.00@8.00
lings	

og receipts were 11,086 head. The market is higher.

t to heavy	$7.90@8.35
	8.00@8.10

PITTSBURGH HAY AND GRAIN

Pittsburgh, Pa., Feb. 3, 1913.

eceipts of No. 1 timothy and No. 1 clover ed are very light, and the demand on the e is strong. The market on other grades ay is stronger, but the poorer grades g poor prices. Clover hay does not have h demand. Straw receipts continue in ss of the demand and the market is k. No. 1 timothy, $16.00@16.50; No. 2 14.00@15.00; No. 3 do., $12.00@13.00; 1 light mixed, $14.50@15.00; No. 1 er mixed, $14.50@15.00; No. 2 do. 00@13.00. No. 1 clover, $13.50@14.00 2 do., $11.00@12.00. No. 3 prairie. 00@11.50; No. 4 do., $9.00@10.00. No t straw, $9.50@10.00; No. 2 do., $9.00 50; No. 1 wheat, $9.50@10.00; No. 2 $9.00@9.50; No. 1 rye, $11.00@11.50 2 do., $9.50@10.00. Ear corn arrivals in good demand. Market strong. No ellow, 57@58c. No. 2 high mixed, 56@ Shelled corn receipts are liberal. Mar is dull. No. 2 yellow shelled, 56@57c 3 do., 55@55½c; No. 3 natural, 54@ c; sample, 52@53. Oat receipts ar equal to the demand. Market dull 2 white, 37@37½c; standard, 36@ c; No. 3 do., 35@35½c; No. 4 do., @34c. The demand for middlings is slow, but bran has improved. Market No. 2 white mids., $25.00@25.50; 1 brown mids., $22.50@23.00. Winter at bran, coarse, $23.00@23.50; do., um, $22.50@23.00.

ELGIN BUTTER QUOTATION

Elgin, Ill., Feb. 3, 1913.

he quotation committee of the Elgin rd of Trade this afternoon declared butfirm at 34c a pound.

NEW YORK MILK QUOTATION

he wholesale milk price is $1.81 per 40 t can for class C; class B, $1.91.

TOBACCO MARKET

hile other sections are more or less per ed by docking and other unfair methods uyers, the Lancaster region is compara y free from such exasperating conditions ments are generally prompt, and all par seem disposed to live up to their obliga s. This, however, is not the result of any al integrity on the part of buyers, but ly a good crop and a low but steady mar Some selling is still going on at $10, 50 and $10.75 per cwt. Some crops at Joy sold at $10.25@$3 per cwt. It is rted that in some sections of the state best of the remaining crops are being sold 10@3 per cwt. It is estimated that but to 25 percent of the new crop is in vers' hands.

uch interest is shown in the new farmers' nization, known as the Lancaster County n Bureau. At a recent meeting, which largely attended, the organization was ched with much vim and under encourag conditions. Thru Government aid and r sources, it is now known that extensive riments and demonstrations will be made g the various lines of Pennsylvania agri ure, including tobacco. Tobacco experi ts are to include the choice and mixing ommercial fertilizers, preparation of land, especially the curing of the matured t. It is part of the plan to permanently loy the services of a trained agricultural rt to superintend the experiments and rwise aid the farmers of the section.—H. Tweed, February 3, 1913.

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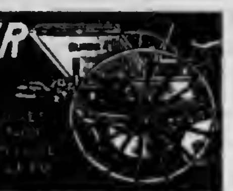

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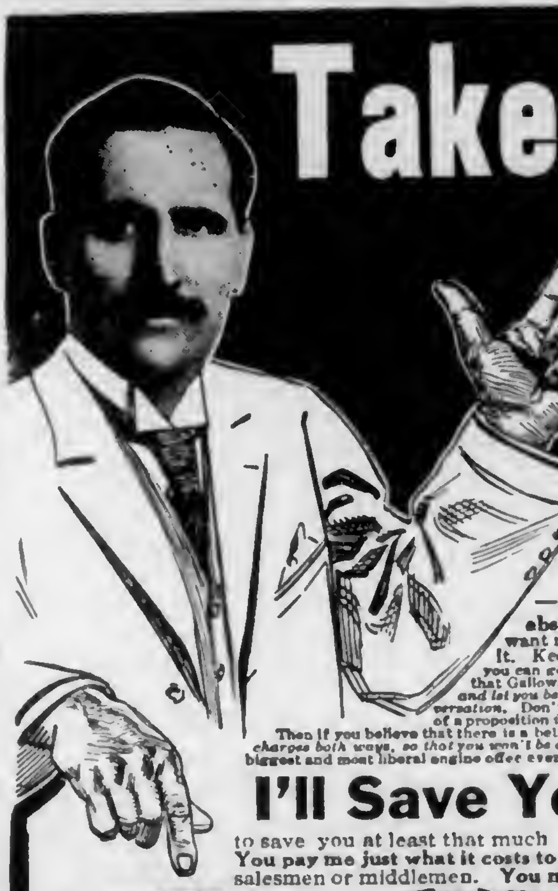

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SECRET SERVICE

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BOOK II

WHAT HAPPENED AT NINE O'CLOCK

CHAPTER XII (Concluded)

He took up the revolver and tucked it in his belt. "Look out for yourself, Captain. Good-bye. I will be back as soon as the President gives me that despatch. That despatch I have just finished is for the Commissary General's Office, but it can wait until the morning."

"All right," said Thorne, and the next moment the operator turned away while the clicking of the key called Thorne to the table. It took him but a few minutes to write the brief message which he addressed and turned to the first messenger, "Quartermaster General."

"He wasn't in his office a short time ago, sir," said the messenger.

"Very well, find him. He has probably gone home and he has to have this message."

"Very good, sir."

The key kept up its clicking. In a short time another message was written off.

"Ready here," cried Thorne, looking at the other messenger. "This is for the Secretary of the Treasury, marked private. Take it to his home."

"He was down at the Cabinet meeting a little while ago, sir," said the second messenger.

"No difference, take it to his house and wait until he comes."

The instant the departing messenger left him alone in the room, Thorne leaped to his feet and ran with cat-like swiftness to the door, opened it, and quickly but carefully examined the corridor to make sure that no one was there on duty. Then he closed the door and turned to the nearest window, which he opened also, and looked out on the balcony, which he saw was empty. He closed the window and came back to the table, unbuckling his belt and coat as he came. These he threw on the table. The coat fell back, and he glanced in the breast pocket to see that a certain document was in sight and at hand, where he could get it quickly. Then he took his revolver, which he had previously slipped from his belt to his hip pocket, and laid it down beside the instrument.

After a final glance around him to see that he was still alone and unobserved, he seized the key on which he sounded a certain call. An expert telegrapher would have recognized it, a dash, four dots in rapid succession, then two dots together, and then two more (— ....). He waited a few moments, and when no answer came he signaled the call a second time, and after another longer wait he sent it a third time.

After this effort he made a longer pause, and just as he had about reached the end of his patience—he was in a fever of anxiety, for upon what happened in the next moment the failure or the success of the whole plan absolutely turned—the silent key clicked out an answer, repeating the same signal which he himself had made. The next moment he made a leap upon the key, but before he could send a single letter steps were heard outside in the corridor.

Thorne released the key, leaned back in his chair, seized a match from the little holder on the table and struck it, and when another messenger entered he seemed to be lazily lighting his cigar. He cursed in his heart at the inopportune arrival. Another uninterrupted moment and he would have sent the order, but as usual he gave no outward evidence of his extreme annoyance. The messenger came rapidly down toward the table and handed Captain Thorne a message.

"From the Secretary of War, Captain Thorne," he said saluting, "and he wants it to go out right away."

"Here, here," said Thorne, as the messenger turned away, "what's all this?" He ran his fingers thru the envelope, tore it open, and spread out the despatch. "Is that the Secretary's signature?" he asked.

The messenger came back.

"Yes, sir; I saw him sign it myself. I'm his personal messenger."

"Oh!" said Thorne, spreading the despatch out on the table and O.K.'ing it, "you saw him sign it yourself, did you?"

"Yes, sir."

"Very well. We have to be pretty careful tonight," he explained, "there is something on. You are sure of this, are you?"

"I could swear to that signature anywhere, sir," said the messenger.

"Very well," said Thorne, "you may go."

CHAPTER XIII

The Tables Are Turned

As soon as the door was closed behind the messenger Thorne laid his cigar down on the table. Then he picked up the despatch from the Secretary of War which the messenger had just brought in, and folded it very dexterously. Then with a pair of scissors which he found in a drawer he cut off the lower part of the Secretary's despatch containing his signature. He put this between his teeth and tore the rest into pieces. He started to throw the pieces into the waste basket, but after a moment's reflection he stuffed them into his trouser pocket. Then he picked up his coat from the back of the chair and took from the inside breast pocket another document written on the same paper as that which had just come from the Secretary of War. Spreading this out on the table he cut off the signature and quickly pasted to it the piece of the real order bearing the real signature. He carefully wiped this pasted despatch with his handkershief, making an exceedingly neat job of it.

As he did so, he smiled slightly. Fortune, which had dealt him so many rebuffs, had evened up matters a little by giving him this opportunity. He had now in his possession a despatch bearing the genuine signature of the Secretary of War. Even if he were interrupted the chances were he would still be able to send it. So soon as he had doctored the despatch, he sat down at the instrument and once more essayed to send the message.

Now, during all this rapid bit of manipulation Thorne had been under close observation, for Arrelsford and Edith Varney had come from the Commissary General's Office, where they had concealed themselves while Thorne examined the porch, and had stepped back to the nearest window and were intently watching. Fortunately, his back partially concealed his actions, and the watchers could not tell exactly what he had done, altho it was quite evident that he was in some way altering some kind of a despatch.

Just as Thorne began to send the message, Arrelsford accidentally struck the window with his elbow, making a slight sound. The instant he did so, he and the girl vanished from sight. Once again Thorne released the key, and his hand moved quietly but rapidly from the instrument to the revolver. The instant it was in his hand he sprang to his feet, whirled about, leaped to the gas bracket and turned off the light. The room was left in darkness, save for the faint illumination of the moonlight thru the windows.

Immediately he turned off the light he ran to the doors leading into the hall. They were provided with heavy old-fashioned bolts which he shot swiftly, locking them on the inside. Then with the utmost caution he edged around the wall until he came to the first window. He waited with his left hand on the catch of the window, and with his right advanced his revolver. After a moment's pause he threw it open quickly and stepped out on the balcony. It was empty as before.

He must have made a mistake, he thought, since no one was there, and he blamed the whole incident to his over-agitated nerves. Indeed, what he had gone thru in the preceding two hours would have shaken any man's nerves, might have broken most men's. He was annoyed at having wasted precious time, and turned to the table again, stopping on his way to relight the light.

Once more he seized the key. He could telegraph equally well with either hand. He did not lay down his revolver on the table at this time, but kept it in his right hand while the fingers of his left hand touched the button. He had scarcely made a dot or a dash when there was a sudden flash of light and the sound of an explosion, that of a heavy revolver, mingled with the crash of shattered glass. Captain Thorne's fingers fell from the key, and a jet of blood spurted out upon the table and the papers.

He rose to his feet with incredible swiftness, his revolver in his right hand, only to be confronted by Arrelsford at the front window. The latter held in his hand, pointed fairly and squarely at Thorne, the heavy service revolver with which he had just shot him in the left wrist. Thorne made a swift motion with his right hand, but Arrelsford was too quick for him.

"Drop that gun!" he shouted. "Drop it quick, or you are a dead man!"

There was no possibility of disobedience. Thorne straightened up and laid his revolver on the table. The two confronted each other, and if looks could have killed they had both been dead men. The soldier shrugged his shoulders at last, took his handkerchief out of his pocket, put one end of it between his teeth, and with the other hand wrapped it tightly around his wounded wrist.

The civilian meantime advanced toward him, keeping him covered all the time with his revolver.

"Do you know why I didn't kill you like the dog you are, just now?" he asked truculently, as he drew nearer.

"Because you are such a damned bad shot, I suppose," coolly answered Thorne between his teeth, still tying the bandage, after which he calmly picked up his cigar and began smoking again with the utmost indifference.

Whatever fate had in store for him could better be met, he thought swiftly at this juncture, provided he kept his temper, and so he spoke as nonchalantly as before. Indeed, his manner h ways been most irritating and bating to Arrelsford.

"Maybe you will change your about that later on," the latte joined.

"Well, I hope so," said Thorne, pleting his bandage and tying the so as to leave the fingers of his hand free. "You see, it isn't pl to be riddled up this way."

"Next time you'll be riddled where else beside the wrist. T only one reason why you are not there now with a bullet thru head."

"Only one?" queried Thorne.

"Only one."

"Do I hear it?"

"You do. I gave my word of to some one outside that I wo kill you, and——"

"Oh, then this isn't a little tete just between ourselves. You someone with you?" asked Thorn terested greatly in this new de ment, wondering who the someone who had interfered in his behalf. haps that evident friendship mig turned to account later on. For ment not an idea of who was entered Thorne's mind.

"Yes, I have someone with me, tain Thorne, who takes quite an est in what you are doing tonight, turned Arrelsford sneeringly.

"That is very kind, I am sure the—er—gentleman going to stay there all alone on the balcony, or I have the pleasure of inviting here and having a charming three-handed——"

The third party answered the tion, for Edith Varney came th window with the shattered pane which Arrelsford had fired and en Thorne was shocked beyond meas her arrival, not the slightest su that she could have been there crossed his mind. So she had be eye-witness to his treachery. H faced Arrelsford's pistol with composure; there was somethi Edith Varney's look that cut h the heart, yet she did not look a either. On the contrary, she ca avoided his glance. Instead she to Arrelsford.

"I think I will go, Mr. Arrelsf she said in a low, choked voice.

"Not yet, Miss Varney," he peremptorily.

The girl gave him no heed. turned and walked blindly towa door.

"I don't wish to stay here longer," she faltered.

"One moment, please," said A ford, as she stopped, "we need y

"For what?"

"As a witness."

"You can send for me if yo me, I will be at home."

"I am sorry," said Arrelsford, interposing, "I will have to det until I turn him over to the gua won't take long."

The middle window was open stepped to it, still keeping an Thorne, and shouted at the top voice:

"Call the guard! Corporal o Guard! Send up the guard to the graph office!"

The note of triumph in his voi unmistakable. From the stree three inside heard a faint cry:

"What's the matter? Who ca guard?"

"Up here in the telegraph o said Arrelsford, "send them up q

The answer was evidently suf for they could hear the orders a tumult in the square below.

"Corporal of the Guard, Post Fall in the guard! Fall in! L men!" and so on.

The game appeared to be up

e. Mr. Arrelsford held all the win g cards, thought Thorne, and he was ying them skilfully. He ground his th at the thought that another mo nt and the order would have been t, probably beyond recall. Fate had yed him a scurvy trick, it had warted him at the last move, and relsford had so contrived that his achery had been before the woman loved. Under other circumstances wound in his wrist would have ven him exquisite pain, as it was he rcely realized at the time that he d been hurt.

Arrelsford still stood by the window, ancing out on the square, but keeping orne under close observation. The il look in his eyes and the malicious eer on his lips well seconded the ex ession of triumph in his face. He d the man he hated where he wanted m. It was a splendid piece of work at he had performed, and in the per rmance he sated his private venge ce and carried out his public duty.

On his part, Thorne was absolutely lpless. There was that in the bearing the woman he loved that prevented m from approaching her. He shot a ute look of appeal to her which she ceived with marble face, apparently solutely indifferent to his presence, t she was suffering scarcely less than . In her anguish she turned des rately to Arrelsford.

"I am not going to stay," she said ecisively. "I don't wish to be a wit ess."

"Whatever your feelings may be, iss Varney," persisted Arrelsford, "I n't permit you to refuse."

"If you won't take me downstairs, will find the way myself," returned e girl as if she had not heard him.

She turned resolutely toward the door. efore she reached it the heavy tramp g of the guard was heard.

"Too late," said Arrelsford tri mphantly, "you can't go now, the uard is here."

(To be continued.)

"Don't you think we have laws nough already, Senator?"

"Oh, yes; but if I don't let 'em now what I'm here for I'll never get ere again."—Atlanta Constitution.

Hobbs—There are two sides to every tory, old man.

Dobbs—That's what's the matter—a ight side and a wrong side; and my ife knows 'em apart.—Judge.

Valuable Almanac.—The I. H. C. Al anac for 1913 is one of the most useful booklets of its kind that we have een in some time. I naddition to the een in some time. In addition to the lmanacs, it gives a vast amount of useul information, in condensed form, inluding postal information, lists of armers' bulletins, chemical analyses of anures, silo capacities, rules for estiating corn and hay, weights of seeds, eeds to sow per acre, distance apart or trees, tables of weights and meas res, interest tables, etc.; just the in ormation you want so often and do not now where to find. It also gives a umber of articles on practical farm ubjects, written by well-known au horities. These articles include: "What good seed bed means to plant rowth," "deep plowing," "care of arm machines," "hints on alfalfa rowing," and "the farm water sup ly." The almanac can be obtained ree upon request to your nearest dealer n the International Harvester Com any machines. Say that you are a eader of Pennsylvania Farmer.

Interest on Postal Savings Accounts. —Under an opinion given by the Penn ylvania attorney-general's depart ent, local assessors thruout the state ill be instructed to return to county ommissioners for taxation as personal roperty postal savings accounts bear ing interest. The state authorities take the position that such accounts re as much taxable as stocks, bonds, money at interest and interest-bearing accounts.

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AN Illinois farmer whose specialty — poultry — kept him on the road a good share of the time, bought an International Commercial Car for no other reason than that of spending more time with his chickens. At the end of six months he wrote the agent that "Not to mention any other saving, that car I bought from you has put $150 in my pocket already. How? When I am at work my time is worth a dollar an hour—sometimes more. On the road it's worth about half as much, mostly less. That car has saved me on an average two hours a day for six months, 300 hours, one hundred and fifty dollars. I wouldn't attempt to run the farm without it."

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On hundreds of farms the car has earned enough to pay for itself in a couple of seasons. Its usefulness is almost endless. Its solid rubber tires reduce tire troubles and expenses to a very low figure. The wheels are high enough to give ample clearance on bad roads. The car has weight enough to give full tractive power for climbing hills. The ignition system is of the best. The motor is simple and easy to understand. One lever controls the car. Brakes are positive and powerful. The whole car is simple, extremely durable and economical.

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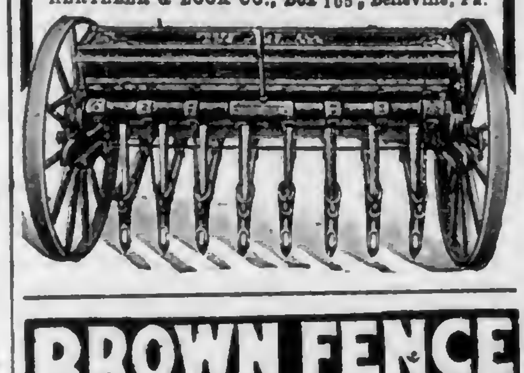

$10,000.00
Guarantee Protects You

If this Hertzler & Zook Grain Drill does not satisfy you in every way and we fail to return your money in full and pay freight both ways, we forfeit a $10,000 local bond which our bankers hold to protect you. Mustn't we be mighty sure that ours is the best all-round drill on the market, or would we dare back it up with a $10,000 bond? The matter is all one-sided in your favor—you can't possibly lose. We pay freight and send you the

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If it satisfies you, keep it at our low price. If it doesn't, ship it back at our expense and we will refund all your money or forfeit $10,000—our bankers hold it for you. This drill sows all kinds of grain, seed or fertilizer accurately. Built for hard work. High, broad-tire wheels lighten draft. Large capacity grain box. We also make a low-down and plain seed drill. We sell direct from factory—save you $20 to $50 dealer's profits. Write for catalog, our $10,000 guarantee and low prices. Special offer to everybody who answers right away.
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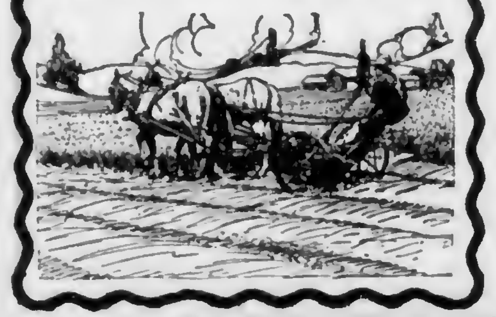

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are you SATISFIED that your mowers are getting ALL the crop. Do they work clean, fast and true?

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are built from the farmer's viewpoint. They are strong and durable; easy of operation and adjustment; light of draft and simple of construction. They embody the high quality of material that has caused owners to say:

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WHY waste time and wear out your life working an Eastern farm, when land in the Sacramento Valley, California, will produce many times more net profit to the acre, with less work and worry. In Northern California the soil is richer, sun shines more often and irrigation makes you independent of the rain and drought.

Oranges, alfalfa and all fruits, grains, grasses and vegetables mature four to six weeks earlier in Northern California.

Stock and poultry are easier to raise and produce more because the climate is milder, and they can be kept out of doors all the year, where green feed grows in abundance.

Markets are near, with cheap railroad, river and trolley transportation.

Investigate these wonderful farms; large acreage is unnecessary.

"TWENTY'S PLENTY--FORTY'S A FORTUNE"

Read carefully this table of profits and note the production to the acre; you will then understand why the Kuhn irrigated farms in the Sacramento Valley are money makers.

Alfalfa - -	$ 60 to $100	Lemons	$150 to $300
Almonds - -	80 to 100	Loganberries -	150 to 300
Apples - -	100 to 300	Olives - -	100 to 200
Apricots - -	100 to 150	Oranges - -	200 to 400
Asparagus - -	100 to 250	Peaches - -	200 to 300
Beans - -	60 to 100	Pears -	150 to 300
Blackberries -	150 to 300	Plums - -	100 to 200
Cherries - -	150 to 300	Potatoes (Irish) -	100 to 150
English Walnuts -	125 to 300	Potatoes (Sweet) -	100 to 150
Figs - -	100 to 200	Prunes - -	125 to 200
Grapes (Raisin) -	80 to 150	Strawberries -	200 to 300
Grapes (Table) -	75 to 150	Sugar Beets - -	40 to 75
Grapes (Wine) -	90 to 150	Tomatoes - -	100 to 150

Write today and learn of people who are making big money today on Kuhns' Sacramento Valley Farms, the profits paying the purchase price.

Don't delay if you are interested, write us at once, as every day now sees new settlers moving on this land and the best farms go first.

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Second Cutting This Season.
The Sacramento Valley, California, is unquestionably America's best ALFALFA country.

TIGHT BINDING

Household

EASY BREAKFASTS

By Hilda Richmond

We are often compelled to have breakfast so early that it looks like a formidable task to get up anything worth while, and we are tempted to compromise with cold bread, fried eggs and coffee. But since this is not a nourishing meal for men out in the cold, we try to save work by getting ready the night before. There are few things that can not be partly prepared the night before, and some of them are fully as good, if all ready to serve in the evening, as if hastily cooked next morning. The oatmeal, for example. It is far more wholesome if cooked all afternoon and warmed over next morning than if boiled 10 or 15 minutes in the early morning, and that is all the cooking it gets.

Corn cakes, gems, buckwheat cakes and various other hot breads are mixed up in the evening, all but the baking powder or soda, tho buckwheat cakes are usually made with old-fashioned yeast, and in the morning it takes only a few minutes to bake them on the griddle. The butter and syrup are all ready, and are kept in a warm place over night, not to chill the cakes if the weather is very cold, and in 10 minutes the men can be eating hot cakes with their sausage, which, by the way, is partly cooked the night before. Partially fried pork in any form is really dangerous, so we partly prepare it while getting supper, and brown it the next morning. Often we make biscuits the night before and put them in a cold place so they will not rise, baking them in fifteen minutes next morning.

When the breakfast is to be very early we use prunes, canned fruit, dried apples, made ready early in the day, and such handy fruits for a beginning or a dessert, just as the men please. Also we have cookies or doughnuts, for however women regard these eatables, no man who works out considers them unhealthy. Occasionally pie is used, and the men like it very much, particularly when it is warmed in the oven while getting breakfast.

The ready prepared cereals all come handy, or else we cook the other kind the day before. Men soon tire of any kind of cereal, but they never tire of hot breads, meats and potatoes. We cut the cold boiled potatoes in cubes the night before and heat them in cream sauce for breakfast, or slice them fine and fry till crisp and brown. Potatoes require about 15 minutes after they are peeled and sliced.

Some meats, like sausage, are partly cooked the day before, but beef is never warmed over, unless it is left-over beef, served in the form of hash or patties. Eggs can be made ready in five minutes, and toast can not wait, of course. The coffee is all in the pot waiting for the hot stove when we go to bed, and ofter there is cocoa made in the evening and reheated next morning. In 20 minutes, at the outside, breakfast is ready, for the fire is laid the night before, and the men are never impatient from waiting. The evening preparations are made as we get supper, and we do not consider them a burden. Life is serene and comfortable in the mornings because of the little extra work, and the men are much better satisfied than if they had to wait indefinitely as they do in some houses. Altogether we have found getting breakfast partly in the evening is a good plan, and we always intend to keep it up.

HOUSEHOLD HINTS

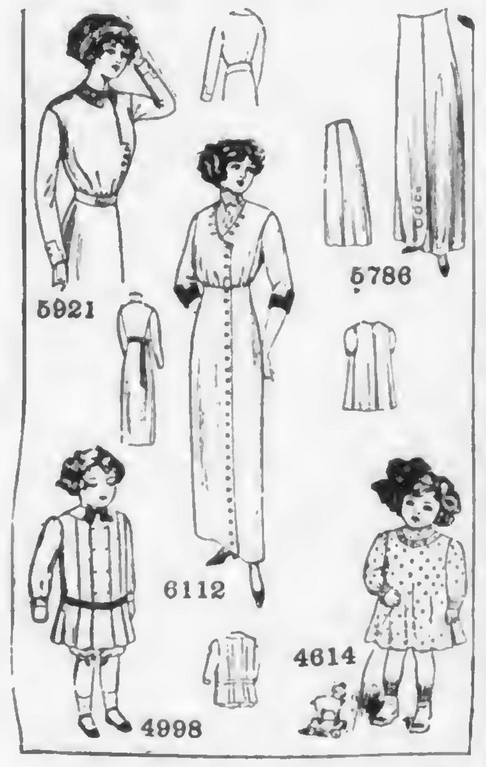
To Tell Cotton From Linen.—Cotton may be distinguished from linen by moistening the tip of the finger and pressing it on the goods. If it wets thru at once it is linen, while if it contains any cotton it will take several seconds to wet thru the threads.

Using Sour Milk.—Some people object to sour milk biscuits or cakes, consequently many good housewives, who are economical in other respects, throw away sour milk. This is unnecessary, as it can be used with baking powder, with as satisfactory results as sweet milk, by adding just a little soda, sufficient to sweeten it, and then proceed exactly as you would with sweet milk, using the usual amount of baking powder. It is impossible to tell just how much soda to use, as it depends on the acidity of the milk. Never use enough to make the milk foam. It is best to add a very small quantity; then when it is thoroly mixed, taste to see if it is just about right.

Eggless Fruit Cake.—Two cups sugar, two cups buttermilk, one pound raisins, chopped fine, four cups flour, one-half cup butter, one tablespoon soda, dissolved in a little hot water, spices to taste. A cupful of rich preserves or jam adds to the good fruit taste. Bake in a slow oven.—M. Andrews.

PENNSYLVANIA FARMER PATTERNS

Be sure to give the figures and letters of each pattern exactly as printed at the beginning of each description. We will not be responsible for correct filling of your orders unless you do so. Also give bust measure when ordering waist patterns, waist measure for skirt and age for children's patterns. Address Pennsylvania Farmer, 214-18 So. 12th St., Philadelphia, Pa.



5921.—Ladies' Shirt Waist, in Regulation Length or in Short Length, for Attaching to Empire Skirt.—Cut in 6 sizes, 32 to 38 inches, bust measure. Size 36 requires 2½ yards of 36-inch goods. Price of pattern, 10 cents.

6112—Misses' and Small Women's Dress.—Sizes 14, 16 and 18 years. Age 16 requires 4 yards of 36-inch material and ¾ yard of 22-inch all-over. Price, 10 cents.

5786—Ladies' Five-Gored Skirt.—Cut in 5 sizes, 22 to 30 inches, waist measure. Size 24 measures 2¾ yards around lower edge and requires 3½ yards of 44-inch goods. Price, 10 cents.

4998—Boys' Russian Suit.—Sizes 2, 4 and 6 years. Age 4 years requires 3 yards, 36 inches wide. Price, 10 cents.

4614—Children's Dress.—Cut in sizes 1, 3 and 5 years. For 3 years it requires 3 yards, 24 inches wide; 1½ yards of insertion. Price, 10 cents.

Anty Drudge Hears Good News

Anty Drudge—"Good morning, Mrs. Progress. What is the news today?"

Mrs. Progress—"Oh, Anty Drudge, I am so glad to see you. I just have a letter from Mary, and she is delighted with the Agricultural College. She says she has learned about so many new things, and the best of all is Fels-Naptha Soap. I'll have to write and tell her I use it, too; I'm so glad you told me about it."

Incubators for hatching chickens, brooders for raising them, patent churns, fireless cookers—what a long way we have come since our parents' and grandparents' time! But these days there are lots of ways in which work can be made easier for women.

Fels-Naptha Soap saves more time and strength for more women than any other one way. If women would use Fels-Naptha Soap to do their washing, they would get rid of the most disagreeable and tiresome part of it; they wouldn't have to boil their clothes, thus doing away with a hot fire. Fels-Naptha Soap works best in cool or lukewarm water.

Grocers and general stores sell Fels-Naptha. Made in Philadelphia

RUNNING WATER means health, convenience and comfort for the farm home. The first cost for installing a **KLINE WATER RAM** is reasonable, the up-keep is practically nothing and in addition to its other advantages it increases the value of your property. It works day and night. Send for circular.

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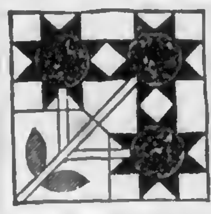

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Select Oysters in the Shell, fresh from the beds, straight to consumer at prices you can afford. Bushel hampers $1.00; small bbls. $1.90; regular size $2.25. Get your neighbor to join with you. Can be kept alive a month.

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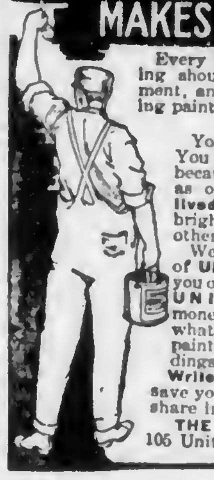

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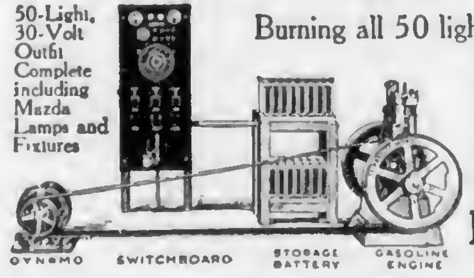

Burning all 50 lights of this system for 5 hours would only cost about 10 cents for fuel oils. You would seldom burn all lights at once hence this low cost would be much reduced. Let us give you full particulars. Write for Catalog No. CD 1732

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THE two Henderson Seed Books are the Farmer's encyclopedias; 290 pages of facts, figures, data of all kinds, useful to the farmer and his family. They have nearly 1,000 illustrations. Eight plates in full color (fine enough to frame, some folks say.) Twelve pages of cultural facts. Tables for planting every sort of vegetable, common or uncommon, and tested information as to how to get the biggest returns in size, quantity and quality. Page after page of seed information and letters telling of the results, of the extra profits made by other *practical* farmers. No man who is planting for profits can afford to miss these books. We'll tell you how to get them free. But first a word

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This big famous 1913 Henderson Seed Book and its companion—"Henderson's Garden Guide and Record"—contain some very interesting news for the farmer's wife too. We have gotten Mrs. Rorer, the world famous culinary artist, to give us a special canning recipe for *each* vegetable listed in our big book.

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Tested seeds give you the chance to make every atom of your farming knowledge tell to the utmost—the chance to coin your experience into bigger profits.

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We have been in business since 1847 (66 years.) Our tested seeds have won hundreds and hundreds of awards and medals at county, state and international world's fairs.

Every day we are getting letters from people astonished at the results of Henderson's Tested Seeds. *"Your Special Grass Mixture has done well for me,"* writes one Indiana farmer. *"It produced last season the biggest crop of hay I ever saw cut off the ground." "I was awarded the Gold Medal at the Alaska-Yukon Pacific Exposition,"* wrote a Washington man, *"for my celery which I grew from your Perfected White Plume Seed." "For years I have been making a specialty of growing Pole Lima Beans,"* writes a man from Missouri. *"I have bought nearly everything offered by the different seedsmen, but have never found anything to compare with the Henderson Ideal for size, yield and quality."*

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Send us 10c. in stamps or silver, mentioning the name of this paper, and we will send you the famous Henderson Seed Books, "Everything for the Garden" and Henderson's "Garden Guide and Record."

In addition we have made a collection of six packets of the best seeds that we have—all varieties of our own introduction—which will be sent without extra charge. This Henderson Specialty Collection consists of one packet each of the following world famous varieties:

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And now mark this—these packets are enclosed in a coupon envelope which, when emptied and returned will be accepted as *25c cash payment* on any order for one dollar or over. So you will not only get our two books and six trial packages, but a discount on your first order as well—all for 10c stamps or silver. Now, here's your chance to prove these facts. Take advantage of the above offer at once.

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"Planting untested seeds is like building a ship of untested steel."

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Let Me Ship YOU This 1913 Spreader FREE

Not one cent down. No bank deposit. Keep your money in your own pocket. I just want you to **try** my new Spreader, **that's all.** Try it right on your own farm for a whole month free. **Test it out as you wouldn't think of testing any other spreader in the world.** Pile on the manure a foot and a half above the box. Put on all she'll hold. Take the fine, powdered stuff or the toughest, heaviest, tramped-down, slough-hay kind from the calf yard. If it's frozen, so much the better. Take it into your field, whip your team to a gallop and SLAM IT IN GEAR! Say, I know that's an awful test. So do you! A test no other manufacturer dares even suggest to you. But do you think for a minute I'd ship you a spreader and let you abuse it that way if I didn't know it would make good? I know what I'm doing. I've made the same offer for seven years, and the Galloway today is better than ever. 40,000 farmers have proved it. But the best proof of all is the machine itself—eleven patented features—all exclusive with the Galloway—double drive chains furnishing power from both wheels alike direct to the beater and moving the load. The only endless apron force feed, roller bearing feed spreader built. Makes the Galloway worth $25.00 more than any other spreader sold today. Low down—easy to load—light draft—two horses will handle it easily. Pull between wheels entirely on the reach—and many other special features. I can't tell them all—just get my catalog before you buy any other make or style of spreader. **Do it today.**

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30 Days Trial Absolutely Free

You know Galloway. You know his fair, square, straight-from-the-shoulder way of doing business direct with the farmer from his factories **and saving you the 30% to 50% middleman's profit.** No man in the country ever gave the farmers as square a deal as Bill Galloway.

Now, I'm out to break my own records.

I know I've done it, but I'm going to leave it to you. If you can figure out a **fairer** proposition than I'm making for 1913, I wish you'd write and tell me—I can't.

Write Me—Get My Special 1913 Proposition

Here comes the **best news of all.** I am going to help you get your spreader partly or even entirely free. No canvassing—no soliciting. When **I say free, I mean FREE.** I've been four years working out this plan, and **say, it's the biggest, fairest and most liberal co-operative offer ever made.**

Now, I want you to get my offer right away. I don't want you to wait a minute. I have a special reason for wanting you to hurry and I'll tell you when you write me.

Here's the Proof:

Gentlemen: My Galloway Spreader was ordered about the first of February, 1909, and is a 50-bu. machine. I have run over a thousand loads of manure through it. Perfectly satisfied.—W. G. SUTFIN, Dundee, Ill.

Sir: My Galloway Spreader works as fine as silk, and I have the $30 left that it would have cost me if I had bought a trust spreader.—S. E. TRENKS, Geddes, S. D.

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Don't let this paper get out of your hands until you have sent for Galloway's wonderful big illustrated free spreader catalog. Find out how you can get a Galloway Spreader shipped right to your farm for 30 days' free test. And above all, get posted on my SPECIAL LIMITED OFFER. **I want you to get that offer sure.** Not another like it. Send me the coupon or letter or postal **today.**

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The only book of its kind in the world. It tells you just the practical facts every man ought to know about fertilizing. Tells how to handle manure, how to treat it, keep it and use it to the best possible advantage. Worth a hundred dollars to any business farmer. Regular price one dollar. Free to you when you write me.

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We will also send you FREE our new 5-color, big, 144-page general merchandising book—giving 1,000 or more bargains in machinery, buggies, harness, furniture, rugs, draperies, etc.; everything you need for the home.

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40 Remember, we carry spreaders in stock at Chicago, Kansas City, Council Bluffs, Minneapolis and Winnipeg.

Would a Sure and Steady Income Interest You?

Would you be willing to work hard for a few years to have it?

You have read of the splendid apple crops of the Pecos Valley of New Mexico and Texas. You have seen reports of the large profits. You know the results that can be secured by intelligent effort. You know these things, but have you ever sat down to analyze the advantages offered by the Pecos Valley?

Do you realize that most of the apples used in Texas come from this valley? Do you know that there are 4,000,000 people in Texas, all apple-hungry and willing to pay well for good fruit? Do you know that the Pecos has the nearest apple orchards?

Do you know that the Pecos Valley has a particularly favorable climate and soil for apple-growing? It is the nearest apple-growing country, and other apple sections are practically shut out of Texas by the long hauls and expense of transportation.

Do you know that the Pecos Valley has numerous irrigation projects, also artesian wells and abundant underground water, easily available by pumps?

The rich soil of the Pecos Valley responds generously and quickly to irrigation. The splendid climate and abundant sunshine put color and flavor into all crops.

You are not dependent on apples, alone; sweet potatoes, cantaloupes, pears and peaches are good money-makers, and truck farming pays well, too, but next after apples comes alfalfa. The bright, pea-green alfalfa of the Pecos Valley is in special demand and is an easy and profitable crop to grow while the orchard is developing.

Do you know that splendid land, ready for the plow, with water developed, can be bought for $75 an acre and up, on long time, with low interest?

Are you willing to let this opportunity slip by you? Is there any good reason for not using the little foresight, energy and hard work that will ultimately make you the possessor of an irrigated apple orchard in the Pecos Valley and all the prosperity that means?

You will find there now — good schools, good roads and many thriving little cities more enterprising and better consumers than larger communities in older sections. You'll get a hearty welcome and won't be lonesome, because orchard homes make close neighbors and the resulting social activity due to common interests.

Write for Pecos Valley folder — it's free—and get the whole story.

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N. B.—Homeseekers' Excursions are run twice a month. I will be glad to tell you about the trains and fares.

Genasco

THE TRINIDAD-LAKE-ASPHALT

Ready Roofing

Get roofing you don't have to repair and renew every little while. You want the roofing made with a genuine waterproofer.

Genasco is made of Trinidad Lake asphalt—Nature's everlasting waterproofer.

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AGRICULTURE THE KEYSTONE OF NATIONAL PROSPERITY

ESTABLISHED 1880 PUBLISHED WEEKLY

VOL. 33.—No. 7. PHILADELPHIA, PA., SATURDAY, FEBRUARY 15, 191 50 CENTS A YEAR.

Rutgers College Headle Dr. T. J. C813

Western Orchard Methods---By E. Bassett,

Secretary Michigan State Horticultural Society

The average farmer is not a good business man. That is a harsh statement, but we may as well face it and make the most of it. If we ever take a look at our competitors it is to become jealous of their successes or to gloat over their failures, rather than to study their methods so as to adopt what brings success or avoid the plans which lead to defeat.

It is reported that within two years the Pacific Coast will have over 15,000,000 bearing apple trees. That is interesting to the eastern grower, because he ought to plan his work so as to meet that competition. My home town of Fennville, in western Michigan, is known to very few of my readers—it is hardly on the map—yet it ships more apples to cold storage every year than does the world-wide known Hood River Valley. Western New York and southern Pennsylvania also have points that excel Hood River in the quantity of apples grown and shipped, but it is in the quantity and natural quality that we lead, while it is the finish and excellence of pack that has put the Pacific Coast points on the map in big red letters.

We all have a general knowledge of western conditions, but it was this summer, while visiting that section, that I had an opportunity to study their problems by seeing for myself and by talking with the growers. The western land agents know just how to use the brightest tints of printer's ink when describing their wonderful land bargains, and their use of superlatives is sufficient to put the advance agent of the modern circus completely in the background.

Among the many horticultural leaders that I met and conversed with was the head of one of the large fruit exchanges, who seemed to take as much interest in eastern fruit progress as in what was being done in his own section. He was keeping a sharp eye on what their competitors were trying to do, and on the probable effect it would have on their business. As I told him of the reviving interest in horticulture in the east, the rejuvenating of old apple orchards, etc., I said: "What are you going to do with these high-priced orchards when we get our methods improved and our organizations for fine packing completed in the East?" What do you suppose his answer was? "You never will do it!" he practically told me, and, thru me, he tells you that the Pacific Coast grower relies on the lack of business of the eastern grower—upon his laziness, his shiftlessness, his dishonesty, if you please. Was he right? I put it up to you. Did he tell the truth, or is it a libel upon the manhood and womanhood of our eastern growers? Your answer must come in the work that is done in the future. Acts speak louder than words, and if we continue to practice the slack methods of the past, that man told the truth, and we will deserve our fate. But I don't believe him. I have faith in the latent honesty and business ability of our eastern growers.

The western growers went there mostly from the East, and crossing the Rocky Mountains did not especially work a miraculous change in their honesty or business ability. But their disadvantage of high-priced lands, and their distance from market, have worked out to their advantage. My home town is only a few hours from Chicago—the largest distributing market in this country—and, since we can ship anything to Chicago and get something for it, most of us are raising anything, shipping everything and are getting a little of nothing, and then, to cap the climax, are trying to lay the blame on everyone except the right party—ourselves.

NEW JERSEY BARREN BEFORE BREAKING.

Next to the disadvantage of distance from market, the other disadvantage that works out to their advantage is the inflated price of land. This compels the western grower to practice intensive cultivation, as compared with our extensive methods. An Illinois farmer sold his 110 acre farm, and invested the entire price in 10 acres of apple and pear orchard in Oregon, and on that orchard he was hiring as much help and using almost as many horses as he formerly used on his big farm in Illinois. Think of it! No wonder that he produced the very finest fruit that sold at the highest price. If you and I would let about three-fourths of our land lie in grass, or simply rest, and then on the balance of the land devote all of our usual energy and brains, we might not produce quite as many bushels of fruit as before, but we would have nearly as much of a much higher quality, and our profits, reputation and happiness would be increased many fold.

PEAR ORCHARD PLANTED ON RECLAIMED BARREN.

When you stop to think that the price the western grower pays for transportation alone to my home market would be a big profit for me in my business and that I do not get it, simply proves the statement with which I started—that I am not a good business man. I wish that I could drive home to you the insult that that man gave to us when he said we would not do these things. He did not say that we couldn't; he did not say that we lacked natural advantages, but he said we lacked nerve; that we lacked the western spirit of "get up and get." That statement rankles in my breast, and it ought to in yours. Michigan, Pennsylvania, New York, and all this grand country was given wonderful opportunities, and if we fail, no one is to share the blame with us.

The western apple excels in what I call "finish," and, in addition to freedom from fungus injuries, that finish is largely due to high color. Just as long as attractiveness to the eye is the first standard by which the buyer selects his purchases, richness of color will be an essential. While our best fruit authorities may disagree as to the possibilities of increasing color in fruit by the application of potash, phosphoric acid or other chemicals, no one can deny that the one great cause for color is sunshine. While the West may have a little more of sunshine, on account of their dry atmosphere, do we not have sunshine here in the East? The chief point of difference lies in the fact that the method of growing trees in the west is such as to make the greatest possible use of that sunshine, while we in the East are so anxious to get an immense amount of bearing wood on our trees, and also crowd our trees so that they interlace, thus making our orchards appear more like a forestry proposition. Their trees are low and with open heads—vase form. In our greed we leave so much brush in our trees that a sparrow can hardly fly thru them. We overwork our trees and then starve them. They restrict their trees by severe pruning and thinning of the fruit, so that the trees can do their best and keep it up. In trying to discourage us, the western land agent says we could not have their kind of open heads, that "the sun scald would kill your trees." Don't you believe it. The only disease we need fear in the East is "dry rot," and the most violent form of this disease is where it attacks the man rather than the tree.

While we must be more thoro in our spraying, we must practice more intelligent pruning and thinning of fruit, if we want the high grade that is skimming the cream from our markets. I know that some of my eastern horticultural friends are issuing words of caution for fear that we will prune too much, and thus "upset the balance," or do something equally unwise. Did you ever stop to consider that our "forestry" methods have been standing us on our heads so long that we have lost all thought of any "balance"? What, pray, will restore the "balance" to a starved root system but to restrict, by pruning, the heavily loaded top? An overloaded and starved team are first relieved by removing a part of the load. Where you find one grower who has made the improbable mistake of pruning his orchard too much, I can show you thousands of growers in leading fruit sections who do not prune enough, and hundreds of others who do not prune at all.

When the western grower sees an imperfect apple on his tree in the growing time, he realizes that that fruit can never grow to be anything but a cull, and it is at once taken off to make room for other fruits. They thus grade their fruit on the tree, because they know that it takes as much of the vitality of the tree to ripen a cull as it does to put the finish on a perfect fruit. In the East the practice is to leave all the fruits that set until harvest time, then paw them over on the packing table to find enough fairly good specimens to face out the barrel. What happens after that we blush to relate.

You say it costs money to thin apples. Does it cost any more, or even as much, to pick off the extra fruits and break up the clusters in June, dropping the little culls on the ground, than to wait until harvest time and then pick the whole mess (and, by the way, that is a very good word), carry them down the ladders, pour out on the packing table, sort them and put the culls in the cider lot or in a more improper place?

Not only do we fail to grow as good fruit as we might, but we have had no system of grading and packing. Why are people not eating and cooking more apples? Have they lost their taste for apples? Why is the demand for bananas, oranges, grape fruit and western apples increasing, while our own superior quality apples go begging for a market? You know the reason. The man who buys a barrel of our apples buys them under a suspicion and pays a price accordingly. All business is and must be based on one principle—confidence. The average eastern pack of fruit does not command the respect of the consumer, and the man who starts out to pack honestly and then markets in the old way, generally finds himself in bad company, and too often suffers as did "old dog Tray."

But the Sulzer bill, which takes effect next July, offers us a means of establishing a reputation and of being known as packing an honest grade, for which the consumer will eventually call and pay a good price. Let us adopt this new law, and then by modern systems of distribution, thru co-operative organizations, modeled after the western methods, we will enjoy increasng demands from a satisfied purchasing public, our markets will be steady, prices will be good and we will not only possess the cash and confidence and respect of our customers, but we will have that self-respect that comes from a feeling of work well done.

USE PARCEL POST

Now that we have parcel post, let us farmers use it. Certainly the coming of this important function of our Postoffice Department was so universally hailed with such acclaim that it must popularly be regarded as of very unusual importance. I am one of those who believe it is. I think it means more to us farmers than to any other occupation of citizenship; but it is not automatic—we must help set it in motion; we must use it. No doubt we will find its rules, cost, regulations and limitations in many cases cumbersome and unsatisfactory, but its realization of establishment is such a decided step in the direction of public convenience and economy that we should probably regard it more as a forerunner of larger use than of actual present benefit; and I am sure we can hasten its general development and universal adaptation to the widest needs of the whole country by using it extensively as we have it now.

I think the great enthusiasm the establishment of parcel post called forth was largely inspired by the general feeling that the express companies were not dealing fairly with us. As a peaple we are world known as extravagantly liberal, but we hate to be gouged. We have always been ready, and probably always will be ready to throw the tea overboard. The mother country never thought of a tax on her colonies of the sapping magnitude of the tax the express companies have been collecting from the people of this country—and are collecting. Therefore the public significance of the coming of the parcel post means the passing of the express business into the hands of the people's government as soon as we demand it in real earnest.

Some of us may say we are opposed to and afraid of government becoming too "strong," too "paternal," too much "centralized." Of course, I cannot discuss that side of the question in a farm paper, but may say that it does not appear that the operation of the postoffice department by the Government has had any element of danger to the stability of the Government, and the enlargement of the operations of that department to embrace the express business for our people need not even remotely be regarded as a menace.

Indeed, I do not think we were ever nearer the Government's acting for the people than we are now, in this promising year of 1913. Let us farmers, therefore, use parcel post for all it is worth as the surest means of bringing in the larger benefits of postal express.

I want to give a concrete example of the comparative movements of local express and freight. One of our village storekeepers, looking over a freight bill, said to me: "One barrel syrup, 600 pounds, freight 60 cents. Shipped yesterday, here today. We couldn't ask it hauled much cheaper than that, could we?"

I agreed. The distance the barrel came is about 80 miles. Freight charge seems quite low enough, yet we presume the railroad makes a satisfactory profit, as there is no competitive carrier.

Another example: The day before Christmas my daughter sent a 15-pound package by express, over the same railroad, a distance of 50 miles, at a prepaid cost of 40 cents, and the package did not arrive at destination till two days after Christmas.

The freight car carried the 600-pound barrel 80 miles for 60 cents; time, two days. The express car carried the 15-pound package 50 miles for 40 cents; time, four days. Next Christmas the successor of that 15-pound box will be made into two and will go from the postoffice.

Let us country people think up ways in which we can profitably use parcel post. Almost all the things we grow and raise in the country are articles of commerce and demand in the cities, many of them, too, utterly without market value in the country. To special customers we may profitably send eggs, butter, choice dressed poultry, pigeons, small fruits, vegetables, flowers, wild and cultivated. There are thousands of city people who are ready to become dependable customers for genuine country sausage, scrapple, fine bacon and little hams, with no packing house traditions following the products. How about some good cottage cheese to the city man who keeps a country memory of good things in his appetite? Homemade bread and cakes, and the big, fat doughnuts of boyhood days! A young man who was driving me in Vermont said: "Mother makes bread and cakes and pies for city people, and I guess has as much clear money as Dad has from the farm." And I may add that "Dad" is one of the keenest farmers in the Green Mountain State.—W. F. McSparran.

WITH THE INSTITUTES

Institutes were held in Lycoming County at Pine Run, January 8 and 9; at Limestone, January 10 and 11; and at Hughesville, January 13 and 14. Possibly in few other counties in the state is there more spirit for better farming than is found in old Lycoming. Their land is much broken in places by sharp parallel mountain ranges, but nestled in between every two of these is found a fertile valley which, in many instances, is of such size as to have furnished many small farms. Here they do general farming, raising abundant crops, and on their uplands and slopes many thrifty young orchards have been recently established. These are sprayed regularly and either cultivated or mulched, and are being brought to the productive age in clean, healthful condition, giving much promise in the line of remuneration, since they have splendid local markets for all surplus products in Williamsport and Jersey Shore. Much attention is being given to corn raising and they seem, without exceptional effort, to produce profitable crops. I had the privilege of enjoying the hospitality of an attorney of Philadelphia, who left a lucrative practice in the City of Brotherly Love 12 years ago, knowing little about the practical side of actual farming, and who came here and established himself on a run-down 200 acre farm. It is a marvel how he has grown into the how, when and why of successful farming. Upon his farm the soil fertility was so depleted that he could not secure a clover stand nor raise either a hoed crop or a small grain crop which would yield a profit above that attendant upon its cultivation and harvesting. He systematically began an upbuilding process by liming and intensive tillage, which was followed by the growing of leguminous crops, proper rotation and a return of the manure made from these feeds to his soil, and today he produces an average of 30 bushels of wheat, 300 of potatoes, 2 to 3 tons of clover and mixed hay per acre, and the past season, on a 30-acre plot, raised 3,870 bushels of fine Yellow Dent ear corn. Nor is this all; he has developed an enthusiasm for his work which is bound to bring him greater successes. He is only one of many whom I might name among the sturdy farmers of this county who are "doing things" and doing them well.

In and around Pine Run they are much interested in dairy farming, having a steady market, on a profitable basis, for all liquid cow products at the condensory at Mill Hall, Clinton County. In order to solve the roughage feed problem, they are beginning to experiment with alfalfa, and have an acute ear for any information along the line of its establishment and after treatment. Here, too, they are much intrested in orchard information.

At Hughesville, situated in the beautiful Muncy Valley, where they have inexhaustible deposits of lime, they are wide awake as to the advantages of its free use. Between Hall's Station and Hughesville there are in daily operation a line of 20 kilns for the preparation of burned lime for agricultural uses, and I am told that the product seldom ever exceeds the demand. In and around Hughesville the land is almost perfectly level, and here the conditions are such that they can raise profitably any crop they see fit to plant.

Ginseng culture is given some attention here, one grower showing me 27 beds he had propagated, each of which he had marketed several times at a net income of approximately $50 per bed. In this county, Hon. A. J. Kahler is in charge of institute work, and altho almost 80 years old, had so organized and enthused his home people that at nearly every session every available seat was taken in the hall or church in which the meeting was held, and the appreciation was such that an expression of the work done and asking for an increased appropriation for the continuance of the work was made by a unanimous standing vote.

Leaving Hughesville on January 14th, L. W. Lighty and W. M. Patton started for East Lemon, in Wyoming County, where a meeting was scheduled for 10 A. M. on Wednesday morning. From Hughesville to Towanda, in Bradford County, is a very mountainous section, covering the eastern end of Lycoming and the eastern middle of Sullivan counties. That portion of Sullivan County thru which we passed seems poorly adapted to agricultural pursuits. Neither is there any well defined manufacturing possibilitly. Here they once had heavily timbered mountain land, so rugged as to offer no inducement as tilable land, and as a consequence it has largely reverted to its primeval state, now being occupied by a scrubby growth of volunteer timber. Coming out of Laporte into Bradford County, the conditions are much improved, and the red shale soils of this section are especially well adapted to pasturage, hence the great dairy interests of Bradford county. We reached Tunkhannock, the county seat of Wyoming County, where we were met by Mr. Knuppenburg, the chairman of Wyoming institutes, and were driven at once to East Lemon, a distance of seven miles. Here was assembled a church full of farmers and their wives, eagerly awaiting our coming. The program was taken up at once, covering dairying and such other topics as were of vital interest. In the evening we were joined by Messrs. Card and Fowler, who had tarried behind in Lycoming to hold the closing session there. The meeting was enthusiastic and well attended. There was on exhibition an apple display which is seldom exceeded outside of regular apple shows.

On the morning of January 17 we made the return trip to Tunkhannock, where a two-day session was held in the court house, attended by people in all walks of life. The interest was unusual. This old county is rich in Indian legends, and notwithstanding its rugged hills and stony lands, is rapidly springing into prominence as a fruit-growing section, several first prizes having come to it in state and interstate fruit displays.

Wyoming County owes a debt of gratitude to her county director, Mr. D. A. Knuppenburg, for his energy and efforts in behalf of her agricultural and fruit possibilities, and to whom much credit should be given for the very interesting institutes held in his section. —W. M. Patton.

WHERE CHEMISTRY FAILS

It is hard to disabuse the minds of farmers of the idea that a chemical analysis of their soil will show them what they need to apply as a fertilizer. It is true that the analysis will show what the soil contains, but it will not show that plants can get it. There are sandy soils on the costal plain of North Carolina in which analysis shows that there is not a superabundance of phosphoric acid, and yet the farmers there contend that an application of acid phosphate alone shows no effect on the crops, and yet when mixed with some potash, which is really deficient in these soils, the effect is good. This shows that the two are needed, as they work in harmony in the formation of starch and the conveyance of the starch as building material in the plant.

In fact, as a rule these two materials are needed in combination in any soil to have the best effect. There are thousands of acres, in all parts of the country, where soil analysis shows that there is a great abundance of potash, and the farmer, depending upon this fact, would jump to the conclusion that no application of potash would be needed in such a soil. Nor would there be, if farmers all practiced a good rotation of crops and stored humus-making materials in their soil, for the organic acids, aided by an occasional liming, will release the insoluble potash.

But experiments in southern Indiana, on soil that abounds in insoluble potash, showed that for a time it paid to apply soluble potash salts, until by good farm rotation the potash in the soils could be made to feed crops. The potash in these soils is in the form of a double silicate of potash that is insoluble in the soil water. Such soils are found all over the Piedmont section of the South, the blood-red soils resulting from the decomposition of feldspathic rocks, and if some means were discovered by which the potash in these rocks could be made available, we would not need to import potash salts. Perhaps this will some day be accomplished, and the pulverized rock will supply our needs.

In experimental plots on the red lands of North Carolina, which the analysis showed were especially rich in potash, and the chemist said that no potash was needed, I noted the fact that where phosphoric acid and potash were used together the result was better than where nitrogen and phosphoric acid alone were used, or where nitrogen and potash alone were applied. This shows, as I have said, that the mineral elements work in harmony.

It is one of the wise arrangements of Nature that the plant food in the soil is not all readily available, for in that case the soils, by careless cultivation, could be actually worn out and become barren of plant food. Then for years the chemists gave no commercial or agricultural value to the insoluble phosphoric acid, and have estimated the value of a fertilizer altogether by the percentage of the soluble phosphoric acid it contains. But further experiments have shown that, under proper conditions, this insoluble phosphoric acid may become available to crops. These conditions are an abundance of humus or vegetable decay in the soil, supplying the needed organic acids. This can be brought about by plowing under the legume crops, or mixing the pulverized phosphatic rock with stable manure.

At the Ohio Experiment Station it was found that the pulverized rock, mixed in stable manure, very greatly increased the efficiency of the manure, and while a mixture of the soluble acid phosphate increased it still more, the effect from the pulverized rock was had at a lower cost.

Some years ago, at the meeting of the Pennsylvania Normal Farmers' Institute, at Allentown, I met a thoughtful farmer from the northern part of the state, who said that his neighbors had for many years failed to get clover, while he and a few others had been using the pulverized rock from Tennessee, known as "Floats," which they got delivered for $7.50 a ton at their station, and the result of their trials was that they no longer buy the dissolved phosphate. Their lands are well cultivated in a good rotation that supplies an abundance of humus-making material, and, making manure for the sod they put in corn, they mix the floats daily with the manure and get remarkable results, and while their neighbors who use acid phosphate are failing to get clover, by reason of acidity in their soil, they are getting as good stands as ever.

Not that the acid phosphate sours the soil, but, as Dr. Thorne, of Ohio, has shown, the phosphorus is used and the sulfuric acid set free, and that unites with the lime in the soil and forms sulfate of lime, or plaster, that does not sweeten the soil like lime carbonate, and hence the soil gets sour.

Down in southern Illinois I attended a farmers' institute some years ago. This section was known formerly as Egypt, because of the productive nature of the soil on the hills there. But they worked those clay soils in corn year after year, until now the station is making experiments to show how they can be redeemed and made productive. When I was there the corn crop looked exceedingly poor, and I remarked on its scanty appearance; but they told me it was then better than usual, for the year before they made hardly any. Chemical analysis showed that these lands, while they had become deficient in phosphorus and nitrogen, were very rich in potash, and it was assumed that with the application of nitrogen and phosphoric acid they should respond liberally. But the soil had been exhausted of the abundant humus that formerly existed there, and neither phosphoric acid nor potash could have its best effect. In fact, it was shown that while the potash was there in abundance, there was an actual deficiency in available potash, and it was found that an application of phosphoric acid and potash in an available form paid well.

Nitrogen is an element which we rapidly lose from the soil on account of the great solubility when it gets into the form in which plants use it, that is, as a nitrate. The absorptive power of a good loam is such that it will hold on to the phosphoric acid and potash applied till some plant calls for it, but the nitrates leach away rapidly. Hence we must keep up the legume crops, not only for their humus-making character, but for the nitrogen they get us from the air as organic nitrogen that must go thru the process of nitrification in the soil by the action of the soil bacteria, and will thus keep up the supply of nitrogen after an application of the soluble nitrate of soda has been exhausted.

It is only thru actual trial in the proper way that the manurial needs of any soil can be ascertained. The Pennsylvania farmer referred to found that pulverized rock and potash enabled him to grow clover, and the general failure of clover all over the country should direct the attention of farmers to the fact that soil acidity is, in nearly all cases, the cause of what they call clover sickness.

Keep up the humus-making materials and lime occasionally, and use the cheaper forms of phosphoric fertilizers and clover will become as flourishing as ever.—W. F. Massey, Wicomico Co., Md.

FIFTH NATIONAL CORN SHOW

The first National Corn Show, held at Chicago, in 1907, came as the result of what some people termed an effort to popularize scientific research in corn growing. There was much criticism of a "one-crop show," at which prizes valued at thousands of dollars were awarded for single ears or groups of 10 ears. The critics pointed out the danger of attaching undue importance to single features of corn growing, and directing too much attention to a single crop. Perhaps this early criticism had its effect, and perhaps the managers were guided wisely by these early objections. But certain it is that the organization and the show started six years ago have outgrown criticism and have developed the most valuable and comprehensive agricultural exposition of the present time.

The fifth National Corn Show has just closed at Columbia, S. C. No longer a one-crop show, it combined all of the elements of a real national agricultural exposition. While better crop production was prominent as one of the aims of the exposition, better farmers and better farming thru more liberal education was the chief aim. This year's location was a fortunate one, not so much from the standpoint of the success of the show as from the effect it had upon the agriculture of the South. Southern agriculture responded liberally in exhibits and attendance, and it can not fail to feel the stimulus which comes from such competition and showing of products.

The strictly educational features were made stronger than ever before, denoting the attention that is being given at present to adapting and developing our schools to country and farm needs. The study of the work of the school and the church as community centers, the adaptation of rural school curriculums to agricultural instruction, and the development of corn and canning clubs to interest the boys and girls of the farm all dealt with the educational problems. And perhaps no place in the country is in greater need of such a demonstration as that selected by the managers for this year's show.

An Alabama teacher, in commenting on the tomato clubs organized by the Government for girls, remarked that these clubs have done the first work in instructing southern housekeepers in the economy of canning and preserving fruits and vegetables. A South Carolina teacher said that from the interest thus aroused she hoped to make progress in teaching sewing and mending, two arts and economies which have been entirely neglected. The further fact that in large sections of South Carolina there are no public schools, and an effort is now being made to secure a state law compelling six months of school attendance per year, all show the needs of such knowledge, enthusiasm and inspiration as such shows are able to bring.

Corn and Tomato Clubs

The show just closed was the round-up of the corn and tomato club work for the year. There were close to 60,000 boys and girls thruout the South enrolled in such clubs during the past season, and the winners in corn production and in securing the greatest net profit from an acre of tomatoes were brought together, free of personal expense, at this show. There were about 550 of these young people, about 10 being girls. The boys were housed at the show grounds under military organization, while the girls were provided with rooms in the city. A week's school was given, the boys being instructed by college and Department teachers in corn and general crop growing, while the girls were given instruction in canning, sewing and general home economics. The result of that number of young missionaries going back into as many counties of the South to follow their teaching, or even spread the enthusiasm of their trip, is difficult to estimate. If only one-third of the boys and girls now members of corn and tomato clubs stay on the farm, the movement will bring rich returns to the South.

PLOWING FOR POTATOES.

Station Exhibits

The management has done well to prevent all exhibits of an advertising nature to enter the show. There were no land or orchard booms there. Each state was represented by its experiment station, and these station exhibits reflected the leading agricultural interests of each state. More stations were represented than ever before, and while the ground covered by each was not as varied as in previous years, the aggregate show was stronger and more instructive. Each station put on exhibit the lines of work to which it had given greatest attention, and thus indicated the present status of its leading industries. Thus Pennsylvania led in its soil and fertility experiments, both in general crop and orchard work; New York in plant breeding work; Michigan in seed selection in grain and forage crops; Indiana in corn breeding; Wisconsin in purebred seed development; the Southern States in cotton and corn studies, and the Western States in grain and live stock work.

Pennsylvania.—The Pennsylvania Station attracted wide attention with its graphic exhibit of results obtained in its 30-year fertilizer tests. The comparative yields from different methods of treatment were shown by charts and also by bales of forage crops and glass cylinders of grain corresponding to production yields. The comparative results obtained from cultural and fertilizer experiments with orchards, under direction of Dr. Stewart, were shown by boxes of apples from the various orchards. The quantity of apples per box corresponded with yields, and the apples themselves showed the quality. The small model respiration calorimeter attracted a great deal of attention, and directed interest to the animal nutrition studies. It is safe to say that no other exhibit on the grounds drew the attention of visitors or received more careful study than was given to the Pennsylvania booth. It was in charge of Professors Gardner, Noll and McDowell.

New York.—The New York Station exhibited results obtained in plant breeding applied to oats, wheat, corn and timothy. As plant breeding is one of the more recent lines of investigation taken up by stations and is proving to be a field of wonderful possibilities, all stations are doing more or less work in it. There was probably more duplication of this work shown in the exhibits than in any other, but New York was easily the leader, just as it is the leader in results obtained. Improvement shown in timothy and grains particularly were highly enlightening to the show visitors. Another feature of the New York exhibit was a 21x40-foot model of a county or local fair ground adapted to meet the needs of a community social center. This model suggested ways of improving appearance of the fair grounds and utilizing them for a good purpose the year round. The plan was in keeping with the interest now being manifested in rural community work, and attracted much attention.

Ohio.—The Ohio exhibit specialized in two lines, wool studies and soil and fertilizer tests. Ohio authorities have gathered what is, perhaps, the most instructive exhibit of wool and woolen fabrics that is to be found in this country. It not only shows samples of wool from all breeds and all wool producing sections, but it also shows how wool is handled in the manufacture of fabrics, and gives suggestions on improvement in growing, shearing, tying and packing. The exhibit appealed particularly to visitors from live stock states. The exhibit in soil studies was along the well-known lines of investigation conducted in that state.

Michigan.—This state was well represented with a splendid showing of the grains and native grasses and legumes, showing the improvement that has been made by selection and breeding. Being a leader in the production of beans, fiber flax, beet sugar, peppermint and potatoes, the work with these crops figured prominently. An exhibit showing the various steps in the manufacture of sugar from sugar beets was, perhaps, the most popular.

Virginia.—Virginia showed strong in studies of grain and forage, both from standpoint of improvement and prevention of diseases. Tobacco studies were also prominent. It showed the best exhibit of apples on the grounds, in demonstrating the possibilities of orchard work under proper care and treatment.

Other States.—Indiana had an interesting exhibit of general live stock and grain farming, based on its corn growing industry. Its work in corn breeding helped to explain the supremacy of this state in national corn contests. Indiana has won the national trophy on 10 ears five years in succession, and leads in winnings on single ears. Rhode Island specialized its exhibit in poultry and soil studies. The effect of lime, alone and in conjunction with other fertilizer, was a prominent feature of the exhibit. South Carolina exhibited studies in cotton in all of its phases, from cultivation of soil to weaving of cotton cloth in a small-sized loom. Studies of soil formation, soil erosion, effect of fertilizers and advantages of rotations; studies in dairy husbandry and the relation of live stock to cotton and corn growing, and studies of effect of careful seed selection rounded out what was, perhaps, the best state exhibit on the grounds. Wisconsin showed results of pedigreed seed production and results in the state from furnishing such seed to farmers. Georgia showed studies in cotton growing on 10 types of soil most common in the state. Washington showed studies in grains, grasses and apples; Missouri in grain and soil studies, also process of cob pipe manufacture; Kentucky, corn, tobacco, soy beans and hemp; Texas, corn, grains, tobacco and rice; Nebraska, effect of cultivation on corn yields, relation of water supply and heat upon corn yields; Louisiana, sugar cane and rice and manufacture of sugar from canes; Minnesota, corn studies in selection, testing and cultivating. The New England States and New Jersey, Delaware and Maryland were not represented.

Government Exhibit.—In keeping with its effort to stimulate agriculture in the South, the United States Department of Agriculture made the largest exhibit at this show that it has ever made. This exhibit covered all phases, from soils to schools, from grains and grasses to refrigerated beef, from road building to heavy power farming.

Schools.—The increased interest in rural school development was reflected in larger exhibits of school, church and community work. A model of an ideal community center was exhibited under the direction of Miss Carney, of Illinois. The model included a consolidated school, a church, grange hall, creamery and laundry, parsonage, teacher's cottage, school barns and fair grounds sheds. The plan was to center the community about the school and the church, with the grange introducing the social features and helping the co-operative development thru the co-operative creamery and community laundry. The school barns and fair ground sheds were to be used in the local school and community fairs, festivals and carnivals. Miss Anna B. Taft represented the Church and Country Life Department of the Board of Home Missions, and the church and school studies attracted general attention. The Winthrop Normal School of South Carolina, also made an exhibit of its home economic work in sewing, cooking and general housekeeping, while a model improved school room, contrasted with an unimproved school room, gave suggestions for buildings and equipment.

A strong program of addresses by men of national reputation was given thruout the two weeks of the show. The attendance was good, altho not up to the standard of two years ago. The management and exhibitors united in placing the education features above attendance and exploitation. It was what it was intended to be, a great agricultural exposition, and as such it was the greatest success in the history of the organization. The leading awards were published last week.

OLEO LEGISLATION DELAYED

A report from N. P. Hull, secretary of the National Dairy Union, announces that oleomargarine legislation will go over to the special session of Congress. It was first decided to put the Haugen bill to a vote in the present session, but after deliberation the friends of oleo did not care to risk an immediate vote. Oleo manufacturers hope for a more favorable sentiment in favor of the Lever bill in the Sixty-third Congress, but dairymen and farmers are fully aroused, and an immediate effort to pass the bill was considered dangerous. Dairymen should keep these two bills well in mind. The Lever bill provides an opening to colored oleo which means a repudiation of our pure food principles and resulting fraud in butter consumption and loss of millions to the dairy interests. The Haugen bill provides for strengthening the present oleo law, honest butter and oleo passing for just what it is. Every dairyman and every advocate of honest food products should urge the passage of the Haugen bill and defeat of the Lever bill.

Horticulture

LUZERNE COUNTY HORTICULTURAL MEETING

By Dr. J. P. Stewart, State College, Pa.

"The Fertilization of Orchards" and "The Spraying of Orchards" were discussed at the Wilkes-Barre meeting. Both of these talks were based on work done during recent years at the Pennsylvania Experiment Station at State College, the work on orchard fertilization being in operation during the past six years. It involves 12 experiments on 10 soil types located in leading apple sections thruout the state, and at the present time it constitutes much the most extensive inquiry into the questions of fertilization and cultural methods for orchards thus far attempted. The most important points brought out in this work up to the present time are as follows:

(1) In some orchards the yield can be greatly influenced by proper fertilization, the most important elements of which have been nitrogen and phosphates. With all other conditions uniform, the gains from such fertilization have run as high as 17 times the amount of fruit produced on the adjacent checks or unfertilized plots, and net profits have been as great as $420 per acre in a single season. Under these conditions, tillage and cover crops have not been the equivalent of proper fertilization. The best gains from the former have averaged about 125 bushels per acre annually, while the latter, without cultivation, has shown annual gains ranging from 270 to 460 bushels per year.

(2) In the absence of nitrogen, as a rule applications of phosphates and potash have not been profitable. On some soils, however, and in the presence of sufficient nitrogen, moderate amounts of these minerals are often profitable. Neither has had any material influence on color. On size, the influence of potash has been favorable.

(3) Nitrogen has had greater influence in increasing yields than any other element. It also has materially decreased color. This is due primarily to delay in maturity, however, and it may be overcome by later picking, which is advantageous in Pennsylvania with such varieties as Baldwin. The delay in one locality was three weeks.

(4) Contrary to a prevalent notion, growth and fruiting are not antagonistic, unless either occurs to an abnormal extent. Our best growing plots, as a rule, have been the best fruiting plots.

(5) Manure has usually proved profitable, doubtless essentially because of its nitrogen content. In most of the cases where it has proved beneficial, however, its net profits have been approached or surpassed by certain combinations of artificial fertilizers.

(6) In a few orchards, however, no form of fertilization has yet produced a material response. This is considered to be due to the presence of other limiting factors, of which improper moisture supply is frequently important. The existence of such orchards emphasizes the need of local tests before making large and regular expenditures for fertilizers. Simple methods of making these tests and a good general formula for preliminary use were indicated.

For bearing trees, where practically all the soil is to be covered, this general formula can be furnished in 500 pounds per acre of a 6-10-5 fertilizer. We prefer to carry the nitrogen in a mixture of about 100 pounds of nitrate of soda and 150 pounds of dried blood. The phosphorus may be carried in 350 pounds of acid phosphate and the potash in 50 or 100 pounds of muriate, depending on the need of potash in the particular soil involved. For young trees, these amounts should be reduced in proportion to the area covered, and in all cases checks should be left to determine the actual value of fertilization.

(7) In the long run, any orchard that is actively producing and growing is likely to require fertilization, since the total plant food draft of such an orchard is quite heavy—more per acre for every constituent except phosphorus that is required by a 25-bushel crop of wheat.

(8) Color in apples is essentially dependent on maturity and sunlight. Conditions increasing one or both of these factors, such as late picking, light soils, open pruning, and sod culture, increase color. Opposite conditions decrease it. Iron applications of the soil have not been shown to improve the color of the fruit.

(9) The average size of apples is governed primarily by the number of fruits on the tree, after the number has passed a certain "critical point." This point is relatively high, our data showing that, even with trees up to 15 years of age, little or no correlation appeared until the number of fruits reached 1,400 or more per tree. Below the "critical point," size can be markedly affected by moisture supply, cultural methods, manures and fertilizers—especially those rich in potash—and these factors may also co-operate in such a way as to materially raise the critical point.

Orchard Spraying

In connection with this subject, attention was called to the necessity of great care in getting the proper density of lime-sulphur sprays, and also to the fact that the tri-plumbic arsenate of lead now seems to be the safest form for use in combination with the sulfur solution as a summer spray. It takes about 3 pounds of the latter to 50 gallons of spray material, and it is now being offered by certain firms here in the East. Some improvements have also been made during the past year on lime-sulfur hydrometers, especially with a view to making them more easily read by the growers. Desirable types of this instrument can be obtained from firms carrying scientific instruments. The Pennsylvania Station's type of hydrometer should be specified if the improved instrument is desired.

Two Unusual Insect Pests

In the talk on "Orchard Spraying," attention was called to the fact that the writer has observed the apple red bug and its work over an area extending completely across the state, from Bradford to Chester counties especially. This work was particularly prominent the past season, and resulted in a very distinct dwarfing of the fruits affected, besides making them decidedly knotty. The depressions caused by the red bug are distinguishable from those caused by the curculio, however, by the fact that there is no scar at the bottom of the depressions caused by the former. The red bugs themselves, of which there are two species known to cause injury to apples, are true bugs, of a distinctly bright red color over most of their body, and are about a quarter of an inch long. They appear about the time the buds are bursting, and it seems that the most practical times to spray for them are at the customary times for the first two applications for apple scab. The first of these applications should be made just as the blossoms are beginning to show pink and before they have opened. The second one is applied immediately after the petals fall. Assuming that lime-sulfur is used for the scab at these two times, the best material to add for the red bugs is a tobacco extract. A trade preparation of this material, applied at the rate of about 1 to 50 or 60, has been found to be quite satisfactory, when the applications are very thoroly made.

Another important insect which has been doing a good deal of damage for several years, especially in north central and northeastern Pennsylvania, is the "apple maggot," or "railroad worm." This insect is especially objectionable because of the fact that, as a rule, no indications of its presence appears on the outside of the fruit. Its work consists in minute tunnels running all thru the flesh of the apple and not primarily affecting the core, as is done by the larva of the codling moth. This insect has long been considered unreachable by spraying because of the fact that the larva hatched within the fruit, and its entire development was accomplished therein. It has been found, however, that it is quite easy to poison the adult fly between the time of its emergence and the laying of the eggs, which covers a period of about three weeks. There are two broods, one appearing about the first of June and the other about the first of September, and hence two applications of a proper spray at those times are sufficient to do the work. The most successful material for this work has been found to be a solution of potassium arsenate and syrup. One gallon of the potassium arsenate and four gallons of syrup (the common corn syrup being quite satisfactory) are used in 45 gallons of water. The applications are made most heavily over the lower leaves and branches because of possible danger of burning the foliage with the soluble arsenate. In some experience that was

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brought to the writer's attention in Vermont this past fall, however, there was practically no burning from the first application, and consequently the one in September was made practically all over the trees. These two sprayings gave almost complete control of the insect in this Vermont orchard, and it had been badly infested previously for several years.

Summer Coutrol of Scale on Peaches

One of the chief points of the meeting was the experience of Dr. Funk, of Boyertown, this past summer, in controling scale on peaches after the foliage had appeared. On apples we have controled the scale at State College in this manner with complete success for the past three summers, but had not tried it on peaches becauses of lack of opportunity. For this reason the experience of Dr. Funk is of special significance. Finding that the winter application for scale had been unsuccessful on a certain block of his peaches, and that they were being practically covered with young scales, he had them sprayed heavily with a 1.005 solution of lime-sulfur immediately after this condition was observed. As a result he secured complete control of the scale on those trees and had a surprisingly slight amount of injury to the foliage. The solution indicated above, which he used, is about one-sixth the strength of the regular winter application for scale, and is obtainable by diluting the best of our commercial concentrates at a rate of about 1 to 60, or it is obtainable from the usual home-made concentrate with a dilution of about 1 to 48 or 50. In the writer's opinion, it will be safer to use a 1.003 solution on the peach, and with a thoro application at the right time we believe that this lower strength will be generally successful. Such a solution is obtainable from the best of our commercial concentrates with a dilution of 1 to 100, or from the ordinary home-made concentrate with a dilution of 1 to 8.

ROUND TABLE TALKS AT THE NEW YORK STATE FRUIT GROWERS' MEETING

Prof. O. M. Taylor had charge of the round table talk on fruit. He said the Monroe strawberry has most of the desirable qualities, but no one variety would do equally well under all conditions. Of the new varieties of strawberries, the Saratoga is one of the best. He also said he had seen pedigree plants grown by the side of ordinary plants, and he would hesitate to pay high prices for pedigree plants. He would expect as much from the ordinary plants, if strong and well grown, and thinks there are reasons for believing that small fruit can be injured by the excessive use of lime, but they have not yet conclusive evidence.

In speaking of the fall strawberries, L. J. Farmer said they had a distinct plant from the June bearing berries. They bloom all thru the season, and by picking off the early blossoms they get the bulk of the fruit in the fall, or from July to the fore part of September. Last year on one-half acre they grew 3,000 quarts, which averaged 20 cents per quart. They were sold to big hotels, etc. Mr. Farmer said there were a few varieties that do well everywhere, and are very desirable. The Semple will do well over a large territory, also the Dunlap and Senator.

Mr. Shawber said he did not assort the first pickings of strawberries, but the later ones were graded for the fancy trade. He never picks but one variety in a basket for market berries

One grower said that the varieties with large crowns and roots, like Wm. Belt, Monroe and Corsican, do especially well on muck and heavy soil.

Frank Bradley, of Baker, N. Y., opened the discussion on Transportation Problems From the Growers' Standpoint." He told how the western New York fruit growers suffered severe losses on account of the delay of cars by the railroads, preventing the growers from marketing their fruit when ready for shipment. Other grievances were an insufficient number of cars furnished, the cars were not well iced, and the delay of cars in reaching destination when packed, causing a loss of fruit.

The discussion was continued by Mr. Bush. He said we not only want to know how to grow good fruit, but we want to know how to get it to market and sell it. The Public Service Commission has not helped us to get care to market our fruit. It seems that the only way to settle these grievances against the railroads is to appeal to the legislature at Albany. Elect men that will represent agricultural interests, then tell them what is needed.

The Question Box was conducted by Mr. Van Buren. One cherry grower said he would plow under cherry leaves early in the spring to destroy fungus. One peach grower had controlled peach curculio by spraying with arsenate of lead and self-boiled lime and sulfur, using two pounds of arsenate of lead to 50 gallons of lime and sulfur, and applying when peaches were not more than half grown. Powdered arsenate of lead has proved equally effective as the paste. One grower said that dynamite was of use in digging holes for trees in clay soils. Another member believed that orchards are better cultivated every year, and alternated with the sod orchard once in three or four years. Many others said cultivate every year and sow cover crops the last of July. One grower said bees are helpful in cross-pollination of fruits, but they may carry insect diseases. Another grower said he would not do without bees in his orchard. Baldwin apples do not need cross-pollination. Some varieties of pears do. The Seckel pear is a splendid polinizer to set for cross-pollinization. The Delicious apple is not recommended for general planting, because it is not resistent to scab and other diseases, but it is well worth a trial in a small way. One member said he had made the drop and No. 2 grade, when sold for evaporating, pay for harvesting his whole crop.—W. H. Jenkins.

ONION CULTURE

The onion probably offers greater possibilities in the matter of a large yield per acre than does any other crop. It also stands among the foremost in the matter of cost per acre to produce a crop. Therefore, the onion should only be planted where soil and climatic conditions are adapted to its requirements, if gratifying financial returns are to be forthcoming.

Altho the onion will grow on almost any kind of soil, experiments have shown that the sandy loam soils of the mesas and the loamy bottom land soils are best suited to its successful growth. The soil should be especially prepared in advance for a crop of onions, in order that the amount of labor (nearly all of which is done by hand) may be reduced to the minimum. Some such crop as cabbage, potatoes or beets—some hoed crop—should be grown on the soil just prior to planting onions, as this will be found to leave the soil in a condition suitable for onion culture. After one of these crops is removed, the soil should be well fertilized. From 20 to 25 tons per acre of stable manure in an advanced stage of decomposition should be used for this purpose. Then the ground should be fall-plowed. The winter frosts will then slake the soil and make of it an excellent seed bed. The seed may be sown earlier in the spring on fall-plowed ground than on that which is plowed in spring, and thus an early start may be had in the work, of which there will be plenty to do.

As soon as weather conditions will permit in spring, the seed should be sown, in drills, from 10 to 16 inches apart. Thoro harrowing and floating to level the ground well should precede the sowing. When the soil has been leveled and prepared, a marker, which is drawn by hand, is used. This may have three or four legs, and it should be made to mark about 26 inches apart. A small hand plow follows these marks, where irrigation is necessary, to make furrows for the irrigation. Then two rows of seed are sown in each space between furrows, with a small garden drill.

The seed should be sown one-half inch deep, using about four (not less than three and a half) pounds of seed to the acre. If plenty of rain does not follow seeding, the ground should be kept moist by irrigation. Plenty of moisture should be provided until the

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tops begin to fall usually some time in August when the onions are practically mature. Many of the most successful onion growers cultivate once a week from the time the plants come thru the surface of the ground until the tops begin to fall, when irrigation is stopped. Some use a hand cultivator for this work; others use a wheel hoe. The cultivation should never be deep, as the onion is a shallow feeder. From one to two inches is considered the most practical depth for cultivation. In the mean time, about three careful hand-weedings are necessary, unless the soil is particularly free from weeds. If the plants appear to be bunched in places, a very little thinning may be done, altho no general process of thinning has yet come into practice among the most successful onion growers.

The cost of growing onions has been estimated at from $100 to $150 per acre, the growers varying considerably in their estimates. At first thought, this seems enormous; but when the fact is considered that the yields on soils that are adapted to the growth of the onion are from 250 to 400 two-bushel sacks to the acre, there comes a vision of profits, despite the heavy expense of producing, and despite the fact that one man can only hope to care for from six to eight acres of onion crop during a season.—Chas. H. Meiers, Weed Co., Colo.

CAVITY FILLING IN ORCHARD TREES

Cavity filling is made necessary by improper pruning and ignorance or neglect in dressing wounds. The cleaning out of rotten cavities and filling them with cement sounds like a very simple thing. It is simple, but like many other simple operations requires considerable skill to do it with utmost success.

The foundation of success in this work is found in cleaning out all of the decayed wood within the cavity, and then sterilizing the interior so as to kill all of the germs and fungi spores.

The entire surface of the cavity should be coated with some strong antiseptic, such as corrosive sublimate. After the cavity has dried of its antispetic bath, it is filled with cement.

There is a trick about filling a cavity in such a way that the cement will not crack to pieces, and be pushed out from the wood so that the water and fungi can gain entrance. This is done by a little V-shaped groove made just inside the margin of the wood, and extending entirely around it.

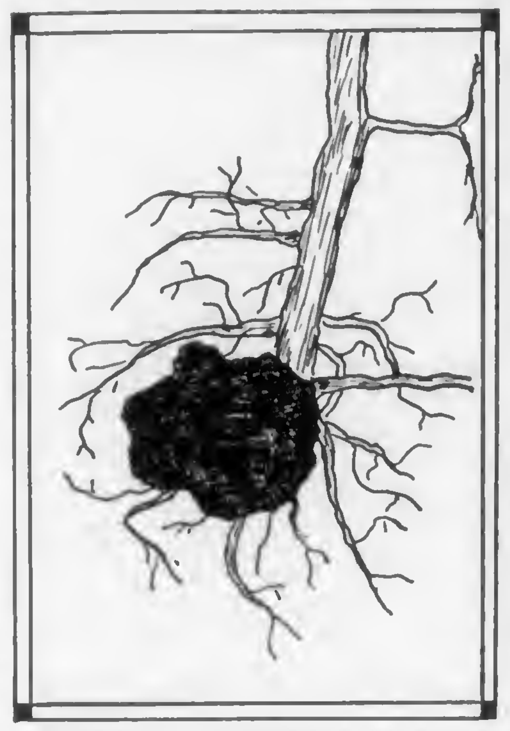
Small holes should be filled solid with cement, and the filling allowed to come flush with the surface of the wood. To do this and be sure the healing callus could not get under the cement, a little strip of bark, possibly half an inch wide, is cut away from the margin of the cavity. This makes it easy to bring the cement even with the surface of the wood, and the new bark can heal over the entire filling as easily as if it were the wood of the tree. The filling of large cavities, such as the trunks of trees, will not be considered here, for the filling of such a cavity is always attended with considerable difficulty, and should be either cut down, or left in the entire care of a tree surgeon.

The concrete for the main filling is usually made of one part good Portland cement, two parts sand, and four parts crushed stone, the consistency of the mixture being such that it may be poured into the cavity and require little tamping to make the mass solid. When this is hardened sufficiently a finishing coat consisting of equal parts clean sand and cement is used, and the surface smoothed. As a further safeguard against the possibility of water getting in between the wood and cement, a good coat of white lead paint or tar should be applied to the outside of the wound, as soon as the cement is dry enough to let the paint stick.—C. A. Spencer, Trumbull Co., Ohio.

CROWN GALL

It is very important that the farmer who expects to set any trees in the spring should become thoroly familiar with crown gall, since transplanting presents the best opportunity of preventing it from entering the orchard.

This disease is very common to a great many species of plants and in commercial or home orchards the damage done is sometimes very great. But regardless of what plant it is that is being attacked, the gall has the same appearance and characteristics. Crown gall is a growth, as shown in the illustration on this page, and may vary in size from that of a pea up to three or four inches in diameter. They generally occur on the crown of the tree, from which habit they get their common name; however, some cases have been found where the gall is above ground.


CROWN GALL FORMATION ON APPLE TREE.

Since crown gall is an infectious disease, being carried from one tree to another in the orchard, the utmost care must be taken to plant only healthy stock. Nurserymen are very careful about sending out infected stock, but occasionally there are a few trees which get past the inspection. It is for these that the farmer must watch.

If an infected tree is found, do not waste time by cutting the gall out, for even by careful sterilization the tree is not a safe one to plant. Burn the tree at once and notify the nurseryman. If he is an honest dealer, he will cheerfully replace the tree free of charge, and hence no risk will be taken. Crown gall has commonly been found on apple, peach, blackberry, cherry, chestnut, pear, rose, grape, walnut, poplar, willow and many other more uncommon plants.

Horticultural Queries.

(Conducted by Prof. H. A. Surface, State Economic Zoologist. Address all queries to Pennsylvania Farmer, Philadelphia, Pa.)

Lime and Sulfur

Kindly answer for me the following questions: We have 2,500 each of peach, pear and plum trees, four to six years old. Is it not safer for us to use a good commercial lime-sulfur solution than to make our own?

Is not the home made solution more effective when applied hot?

What comemrcial solution do you recommend?

How many gallons will be necessary for the first application to our trees?—F. H. E., Pittsburgh, Pa.

It is not in any sense any safer nor less liable to prove injurious to the trees, nor more liable to kill the scale, if you will spray with the commercial lime-sulfur, instead of making your own. In other words, the commercial lime-sulfur solution will not give you any better results than the home-made, if they are applied at the same strength. You will not at all be liable to get either kind of solution strong enough to injure the trees. Consequently, that point is out of the way.

The one advantage of the home-made material is its cheapness. It requires no expert knowledge to make it, and no special apparatus is needed. I have had a man, who could not read nor write, making it in two ordinary iron kettles faster than a good apparatus could apply it to the trees. Neither solution is improved in effectiveness by applying it hot. The heat does not kill the scale.

As to the brand of commercial solution to use, I can say there are several brands on the market, and there is not much difference in the value or virtue of most of them. Naturally, there are some that are a little stronger than others, but this is readily determined by the hydrometer test.

The soluble lime-sulfur is a dry preparation, which is to be put into water and dissolved. When it becomes as strong as the liquid materials it is as good. The test is to be determined by the hydrometer, as for other solutions. It will surely kill the scale when made and applied strong enough, and under this condition will be fully as good as any.

It is almost impossible to tell how many gallons will be needed for the application of your orchard, as this varies remarkably with the kind of apparatus, the nozles, the man doing the work, and the weather, especially in regard to the wind.

Apple Varieties

Will you please advise which of the following varieties of apples are the largest yielders, Staymans Winesap, Jonathan or Baldwin? What month of the year do you consider the best time to set out trees of these varieties? What nursery do you consider have the best trees for planting, and their address?—P. G. M., Lewistown, Pa.

I have seen Stayman Winesaps yielding, this last fall, as heavily as any other varieties possibly could. There is no doubt about their ability to yield well with first class fruit. I doubt if the Jonathan yields as heavily as Stayman, and perhaps not as great as the Baldwin. Also, the fruit is smaller in size, and has a tendency toward the black spotting, which may occur in the skin of both Baldwin and Jonathan.

In your region, however, all three should do fairly well, with preference for Baldwin and Stayman. Set out the trees at any time in the fall, winter or spring, when the ground is not frozen. The earlier in the spring it is done the better. A poor season is after the buds have started to push leaves on the trees you are planting.

As to a nurseryman to furnish you trees, there are many in Pennsylvania who are reliable. Some are advertising in the Pennsylvania Farmer. We refer you to them.

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Poultry

REASONS FOR POULTRY FAILURES

The reason that so many farmers are discouraged with poultry is not because of the fowls, but because they do not give them a chance. Fowls must have proper feeding, housing, yarding and breeding, just as well as the dairy cow, horse, etc. If the poultry are yarded, the yard must be worked up once or twice a year to freshen the soil and to keep the filth down. A little slacked lime scattered on the grounds will prevent disease from germinating on or in the soil. Some kind of grains may be planted in the yards so as to give green food.

The houses must be well and properly built. They must be built in a dry and well drained place. I would advise on a south side hill, where they will get the freedom of the sunshine, which is very important in a poultry house, and we can not very well ventilate a house without sunshine. The house must be so built that the floor will always be dry. With the front facing the south, it may be two-thirds open and the north, east and west sides walled or boarded up air-tight, so there will be no draught in the house. The opening of the front is best two-thirds cloth windows and one third glass. This kind of a house will be ventilated about right and always will be dry and not too cold. A cold, dry house is far better than a warm, damp one. The roosts should be placed about one foot above the dropping boards, or so as to be easily cleaned, and they should be cleaned two or three times a week; and the roosts should be from 9 to 12 inches apart. A good board or concrete floor is best suited for a poultry house. If a concrete floor is used, it should be made moisture proof.

The kind of food and the way the fowls are fed has a great deal to do in getting winter eggs. They must have a properly balanced ration to make eggs, and they can get a properly balanced ration when they are allowed to run out doors in the spring and summer, when they can get plenty of green food and animal food. And we all know that they will lay eggs at that time when left to freedom. Their ration ought to be balanced up to a nutritive ratio from one to three or five for an egg ration. That is, one of protein to four of carbohydrates and fats. Anyone can balance their own rations if they know the analyses of their food or grains. I will give a table of some of the food mostly fed to poultry.

	Protein	Carbo. and Fats	Nut. Ratio
Wheat	10.2	73.0	1 to 7.2
Buckwheat	7.7	53.3	1 to 6.9
Corn	7.9	76.4	1 to 9.7
Corn meal	7.9	76.4	1 to 9.7
Rye	9.9	70.0	1 to 7.4
Oats	9.2	56.8	1 to 6.2
Oats, ground ..	9.2	56.8	1 to 6.2
Wheat bran	12.2	45.3	1 to 3.7
Wheat mids. ..	12.8	60.7	1 to 4.7
White mids. ...	25.8	65.6	1 to 2.5
Alfalfa	11.0	42.3	1 to 3.8
Clover	6.2	39.6	1 to 5.8

Animal Food:—

	Protein	Carbo. Fats and	Ratio Nut.
Green cut bone.	18.0	43.0	1 to 2.4
Meat scrap, lean	66.2	31.1	1 to 0.5
Meat scrap, fat.	53.0	68.0	1 to 0.3
Dried blood ...	52.3	5.6	1 to 0.1
Skim-milk	2.9	5.9	1 to 2.0

When animal food is not fed in the mash, one-half ounce to one hen per day is not too much. I find the best way to feed is by scattering some mixed grains in the litter first thing in the morning, so as to get them busy working. I allow about one ounce of grain to the bird for the first feed. Ten o'clock A. M. give all the green food that they will eat. I have the mash in the hoppers and feed dry, and have the hoppers so that the birds can help themselves at all times, and so arganged that they will not waste the mash by getting it on the floor. Dry mash is far better than wet mash, and there is not so much danger of looseness of the bowels, since they will digest it better. Right before sunset I feed the mixed grains in the litter the same as in the morning, about one ounce to the bird. Have grit, shell and charcoal before them at all times. Poultry need grit, as well as the poultryman does, only of a different kind.

SPROUTED OAT BEDS FOR GROWING GREEN FOOD UNDER THE POULTRY HOUSE.

The breed of chickens to keep depends mostly on the market which you are after. If white eggs are preferred, Leghorns, Minorcas, Hamburgs, Spanish Houdans and Andalusians are preferred. If you are going in for eggs and meat, the larger breeds are preferred. Reds, Wyandotts, Plymouth Rocks, Orphingtons and Dorkings. The heavy breeds will lay just as well as the small breed in the northern states, and make better winter layers.

If you raise pure breeds, do not inbreed, since in-bred pure types are lower in vitality than any cross-breed, and vitality is what a hen needs. In sorting out your birds, choose those that have a glossy plumage, smooth comb and face, good stout legs, long, wide back, deep from body to back, so as to have plenty of room for egg production. A bird with a dull plumage, coarse face and comb, peaked back, thin, pale legs, seldom lays but few eggs. If you want winter eggs, hatch your pullets early in February, March and April and keep them growing and your egg basket will soon be filled.—B. S. Banks, Pike Co., Pa.

TROUBLE WITH EGG-EATING HENS

Several readers report losses due to hens breaking and eating the eggs as soon as laid. In response to their requests for suggestions as to cause of the trouble and means of breaking up the habit, I will say that the freezing of eggs in the nest, or the accidental breaking of the shell is generally the beginning of this trouble. Very soon the fowl discovers that the taste of fresh eggs is better than that of corn. When one or two begin to chase about after eggs all soon join in the struggle and there is trouble ahead.

One of two things must be done. Either the fowls must become disgusted with fresh eggs as a diet, or the nests must be arranged so it will be impossible for them to roll the eggs out and break them. If a number of hens are laying, one should have a nest for every two hens, deep and soft, with nothing in the litter that can possibly break an egg if it is rolled against it. The nest should not be too large, for if two or three hens can get on at once the danger of breakage is increased. Then the nests should be enclosed in some way so that the hen will be in partial darkness and not visible to other occupants of the house while laying.

I have just fixed a number of nests, made in small deep boxes, with boards leaned against the wall and nailed fast to box on front and end, thus leaving an opening just large enough for one hen to enter at a time. If the hen that lays in this nest is addicted to the egg-eating habit she can not easily break the egg, as the nest bottom slopes to the center. The eggs should, for a time at least, be collected often, so that there will not be more than one egg in the box at a time.

Another plan that I also adopt is to collect all the egg shells I can and fill them with a mixture of cayenne pepper and kerosene, stirred thick with flour; a little water may be added. I fill the shells with this dough and paste the shells together to look as much like a fresh egg as possible. A strip of cloth may be pasted around the break. Then I saturate the outside of shells with kerosene and take them to the coop, throwing them about in the litter in conspicuous places but never in the nest. The first few eggs may be eaten greedily, but after a little their appetite seems to fail them. I repeat the process until not a hen will touch an egg lying on the floor. If one has no shells, porcelain eggs can be strewn about on the floor, and the hens will become so discouraged trying to break them that they will not try on the real thing. One soft-shelled egg left where the hens can get it, or a frozen egg broken in the nest, will sometimes start the habit again. If the hens can be kept very busy scratching they will attend to their own affairs and not meddle with their neighbors. In most instances the habit is formed during hours of idleness in winter confinement. —P. P.

PUREBRED POULTRY

Statistics prove that the American hen is not doing her duty. With less than seventy eggs per head each year to her credit, where she might have twice that number, statistics prove that a better quality of stock should be encouraged. The recent egg-laying contests indicate that there is not so much significance in the breed as in the strain, therefore my subject should properly have been "Pedigreed Poultry."

The most successful breeders of the present day are pedigree-breeding; that is, they are recording the ancestry of each fowl, just as do breeders of cattle and horses. This method is carried out by the use of trap nests in the breeding pens, which identifies each egg. Each hen's eggs are kept separate from all others, and those from the best layers, having been mated to cocks of an equally good laying strain, are hatched. The chicks are identified by foot marks and the grown birds by leg bands with name and number. Careful records are kept, and after a few years of breeding by this method, it is possible to build up a strain that will double the productiveness.

Sometimes it may be possible to produce a laying strain by accident, but how much more likely it is to be done by careful breeding. In this country pedigree-breeding is still comparatively new, but as fanciers follow the method, there will doubtless be built up more of the strains that will produce 250 eggs per year, or even more.

One well-known breeder of pedigreed stock estimates that the cost of producing birds on his farm is about ten cents per head more than by ordinary methods. This is to hatch them, and it costs no more to raise the pedigreed chick than the barnyard type. His entire crop was sold in one year for $4.50 per head. The demand far exceeds the supply, and many farmers might profitably take up the industry. It costs a little more to build the houses, equip with trap nests and fixtures; then there is more work, of course, in keeping separate the eggs and recording the data, but breeders of fancy stock find that they are producing better market birds by this method, indicating that it is not alone in the laying qualities that pedigree counts.—Charles H. Chesley, Strafford Co., N. H.

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The Dairy

SELECTING AND RAISING THE GOOD HERD

After I returned from the West, six years ago, I bought a half interest in my father's dairy herd. He looked over several dairy herds along his line of breeding, and purchased the best sire that he could find. He then said to me: "Boy, you take this sire and follow along the lines of breeding that I have been following for the last 30 years, and you will in time reach my ideal. My ideal is a herd in which every cow produces at least 300 pounds of butter in a year." At the present time we have a cow that has produced 600 pounds, and four that have made over 400 pounds in a year. We have sold 10 in the last four years that produced 300 pounds at maturity. We have done no force feeding to accomplish these results. The cows are nothing to boast of, but show that we are slowly improving our herd. My ideal now is a herd in which every cow makes at least 400 pounds per year. I do not believe a man can afford to keep a cow producing less than 300 pounds in a year, when we take into consideration the cost of feed and labor.

If we are selling milk, we do not have the skimmed milk to raise the young calves. It is claimed by some of the Philadelphia dairymen that they can not raise the young calves successfully without the aid of milk. It is Nature's way to feed the young. There are a number of calf meals on the market that are said by the manufacturers to take the place of milk, but as a rule they are considered only as partial successes. Calves fed meals do not make the growth they should with the aid of milk. So some of these Philadelphia dairymen go north to Bradford County, the western part of which is noted for the production of butter, and buy their cows. These buyers come into our stables and pick out the ones they want without asking any questions, and often pay us our price. I do not know whether these men do not believe what we Bradford men say about our stock, but it is evident that they are willing to take chances and rely on their own judgment.

When we are going to buy cattle in this way and have an opportunity to go in the stable when everything is quiet, the first cow that looks up and takes notice is usually the best one in the herd. A good dairy cow has a clear, bright eye, usually broad between the horns, the forehead dished, wedge-shape in form any way we look at her, with large, crooked milk veins. It was one time thought that the milk was delivered to the udder thru the milk veins, and that the udder was a storage tank. But the scientific men have exploded that theory. They examined a cow that was giving a large flow of milk. Just before milking time, she was slaughtered and her udder slit open at once. They found no milk, but a substance yellow in color. The theory is now advanced that the milk is manufactured in the udder after the process of milking begins. This yellow substance is carried to the udder by the blood, and the crooked veins and deep milk wells show great capacity to carry the blood back to the heart.

The cow that wants to break thru the fence and get into the corn and clover, and can kick the hardest, and usually does so at the least provocation, is usually the one richest in butter fat. It takes nerve force to produce butter, and these individuals are always irritable, but can usually be controlled by kind treatment. I know a number of dairymen that are always trying to sell the unruly cow, but by so doing are disposing of the one that is paying the board bill of some sleepy individual. The sleepy cow is the boarder. We must have cows that have a large capacity to consume coarse fodder, because the roughage is the cheapest to raise upon the farm. In order to be good producers, cows must be good feeders. But all good feeders are not always good producers. I have fed a few that would eat enough but would not pay for it.

The man that produces butter can not afford to buy his cows to replenish his herd. The most profitable part of the business is raising the young stock. The calves that we are going to raise to improve our herd should be selected from our best producers. There is a natural law that like will produce like, providing the mothers have not been forced to make big records by high feeding. In this case, the calf has not been properly nourished, and at birth is a weakling that can never make the record of its mother, regardless of the care given it. What we want to do is to build our foundation so that every machine in it will add to the strength of the herd. The law of atavism is constantly cropping out, and the greater advantage that purebred stock has over mongrels is that the longer they are bred pure, the less will be the tendency to revert to some remote ancestor that did not produce but 100 pounds per year. And that is the reason that the dairyman with purebreds usually succeeds, and the one with the mongrels fails. Now the calves we have selected to improve our hehd should have whole milk for the first three or four weeks, and then commence mixing a little skimmed milk, increasing the quantity for about a week, when they should be on skimmed milk alone. We use in each feed a teaspoonful of blood flour. This will prevent the scours and keep them in a healthy growing condition, and by this time they can be taught to eat clover hay, silage and mill feed.—Leon O. Van Noy, Bradford Co., Pa.

CHAMPION HOLSTEIN BULL AT LANCASTER CO. FAIR.

Shown by W. F. Throop, Crawford Co., Pa.

EVERY-DAY PROBLEMS IN THE DAIRY

The following information on every day problems was brought out by questions asked and answered at the recent meeting of the New York Dairymen's Association:

Feeding Heifer Calves for Production.—Begin six or eight weeks before the calf is born, by feeding her mother foods rich in the elements that make blood, bone, muscle, hair, etc. Then continue to feed her for developing her for high milk production. One member said he got more milk at less cost by feeding and milking his cows three times a day.

Beets or Corn Silage for Dairy Cows.—The beets are not much superior to corn silage, but they give a variety. Feed whichever is cheaper, and which gives best results with individual cows. Oats have a value that has not been found in other feeds. Feed them occasionally.

Fresh Cows.—Testing a cow for 30 or 40 days after freshening will determine her value. When it is time for a cow to freshen, feed from two to four pounds of bran moistened with warm water for three or four days. Feed two times a day. It is soft, laxative and gives sufficient nourishment. After freshening, give close attention to the cow for the first 48 hours. Do not milk her out too much at first. If milk fever appears, inflate the udder with air. More cows are injured by injudicious feeding after calving than at any other time. If the cow has been rightly fed, the calf will be in good condition. Give the cow a variety of grains, and occasionally change her ration.

Heavy Feeding.—When feeding cows for high milk production, watch them carefully. At first indication of going off feed, the eyes look bad, hair is rough, and skin hard. Take the feed all away, and give her salts and one quart of raw linseed oil, and give her a bran mash once in a while. When feeding for milk production, for a 1,000-lb. cow, begin with four pounds of grain a day. The next day weigh her milk, and each alternate day increase her grain one-half pound. Then weigh and keep increasing the ration as long as you can do it profitably.

Value of Feeds.—Grain should never be fed a cow separately, because cows bolt their food, then bring it up to masticate it. When grain is fed alone it will not be brought up as well as if fed on cut roughage, as ensilage, straw or corn stover. There is more value in straw and corn stover than can be determined by chemical analysis. The value of roots is in their succulence and palatability, and as an aid to the digestion of other food.

Spring Condition.—Cows give more milk in the spring because they are out in the fresh, open air and sunshine, have warm water to drink, and the atmosphere is just right, and the cow is surrounded by a succulent, palatable, nutritious ration, of which she eats all she wants and then eats more if she can. Alfalfa is the cheapest and most efficient source of protein. There is sure profit in dairying if you have good cows, ensilage and alfalfa.

Cheese Questions.—New England people demand a soft cheese and the first requisite is good milk. The cheese makers are to blame for having poor milk. If a farmer brings it to the creamery, they should refuse to accept it. Skim cheese is doing the cheese business an injustice. Washed curd cheese, when properly made, will sell well, and there will be a demand created for it. If cheese is rightly made it is one of the best balanced foods we have. The maker should put a brand on the cheese, and also on the box, stating the percent of fat it contains. The maker should live up to the laws. If you have cheese of a good quality, you can get a good price for it. Some farmers have been known to take a little cream off the cans of milk before taking them to the creamery. Doubtless they did not consider it was robbery, but no man has a right to take even a spoonful of cream from his milk. The Babcock test encourages farmers to improve their herds, make a better quality of milk and give their cows better care.

Butter Substitute.—Oleo should be sold only as oleo. If a line of demarkation is not drawn, oleo will crowd out butter. We can best fight the oleo problem by working for a law to have oleo in certain shaped packages and served in certain dishes in hotels and restaurants. There should be some way to let people know when they are eating oleo. Renovated butter comes from the small farms to renovating factories under government inspection, and should be branded as renovated butter. Renovated butter is a disgrace to civilization and dairy education. The cause of mottled butter is uneven distribution of salt. Old cream or dry and high salting of butter will cause strong flavor to butter. All the undesirable flavor of butter will be brought if salted heavily.

Milking Machines.—If properly and intelligently operated, milking machines are a good thing for farmers to use; but one must be a student of animals and of machinery. It is advisable to milk one cow at a time, and to strip each cow by hand, to be sure the milk is all out of each teat. Young cows will give down all the milk usually, but the older ones may not.

Ventilation.—The normal temperature for a stable should never be below 40 degrees, nor above 60. A warm air is not necessarily a pure air. One member said that cows carried more hair and had better health with fresh air and cold rooms. The King system of ventilation, if properly constructed, will work on every barn in the United States at comparatively small cost.

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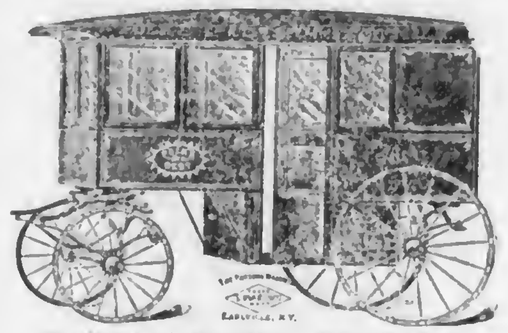

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Floors and Silos.—Concrete stable floors should be finished rough to prevent cows from slipping. The floors should be laid to lead to some point for drainage. Salt should never be put on concrete floors or walks. The properly constructed silos have all the good qualities of the best. Paint the inside with tar paint. Old wooden silos can be made better than when new, by lining the inside with steel lath, and plastering with Portland cement. If asphalt is put over the concrete stable floor, and sawdust sprinkled on it, it makes a softer place for the cows to stand and lie on. No bedding is required if the insulation is perfect; that is, if the concrete has been rightly laid with air spaces.—W. H. Jenkins, Delaware Co., N. Y.

MILK-POWDER STARTERS IN CREAMERIES

A report has been received by the Department of Agriculture from the South Dakota Station of a study of the relative value of milk-powder starters as compared with natural-milk starters. It is pointed out in the report that milk powder has its value for starter making wherever the location of the creamery plant is such that an ample supply of good milk can not be obtained at the usual price. This is often the case in large cities, and it is believed, therefore, that milk powder has a special value under such conditions, for it has been often demonstrated by experiments that a good starter, properly used in cream in connection with the manufacture of butter, improved the uniformity, quality and keeping qualities of the butter.

In comparative tests reported by the Station the butter made from cream ripened with milk-powder starter scored on an average 0.042 points higher, and showed an acidity 0.015 cubic centimeters less than the butter made from cream ripened with natural-milk starter. The milk powder can be easily kept without deterioration, as shown by the fact that two drums of this material remained in good condition in a room adjacent to the creamery for over a year at ordinary room temperature.

Milk powder should be dissolved in pure warm water, preferably clean distilled water. Pure well water also gives good results. The powder should be added to the water, rather than the water to the powder, to get the best and quickest results. The cost of skim-milk powder is 16 cents a pound. When it is dissolved in water in proportions of 3 ounces to a quart of water, the cost is 11 cents a gallon and $1.32 per hundred pounds.

The advantages of skim-milk powder for starters in creameries are that a large supply may be secured at one time, it is always on hand when needed and always fresh, and is not bulky to store and to transport. The chief disadvantages of the powder for starters are the cost and some additional work in preparing the starters.

BUTTER FROM PASTEURIZED SWEET CREAM

Three hundred samples of sweet-cream butter, which have been held in storage for a period averaging eight months, will be examined and scored in the Dairy Division Laboratory, Bureau of Animal Industry, Department of Agriculture, Washington, D. C., on February 25, 26 and 27, 1913. An invitation is extended to all persons interested in such butter and in the methods used in its production to be present at that time, when they will have an opportunity to examine the butter and secure full information regarding its manufacture.

This butter was made for the Navy Department during the months of April, May, June, July and August, 1912, from pasteurized sweet cream at five creameries located in Pennsylvania, Minnesota and California. Its manufacture was supervised by inspectors under the direction of the Dairy Division, and complete records were kept of the acidity of the cream, the water and salt content of the butter, and its score at the time of packing. Each of the 200 samples represents a day's make, and were taken for the purpose of determining its quality after having been kept in storage. Creameries in different parts of the country are showing considerable interest in the manufacture of butter of this kind. All who are interested are therefore given this opportunity to secure definite data concerning the manufacture of sweet-cream butter for storage, and to observe personally the final results.

NEW AYRSHIRE RECORD

The largest official Ayrshire milk record in the world was recently made by Jean Armour, a typical 1,100-lb. Ayrshire cow, owned by Mrs. F. D. Erhardt, West Berlin, Vt. Jean Armour's year in the test for advanced registry ended November 9, 1912, when she had to her credit 20,174 lbs. of milk, yielding 774.73 lbs. of fat, equal to 904 lbs. of butter for the year. Her feed for the year consisted of 1,100 lbs. of gluten at $19.25; 1,500 lbs. alfalfa, $18.75; 2,200 lbs. clover hay, $15.40; 300 lbs. cottonseed meal, $5.10; 60 lbs. oil meal, $1.08; 200 lbs. corn meal, $3.50; 500 lbs. ensilage, $12.50; 1,000 lbs. bran, $13; 100 bu, beets, $50; 900 lbs. ground oats, $18 and six months on pasture at $12, making a total feed cost of $168.58 for the 904 lbs. of butter.

Other Ayrshire record holders were Rena Myrtle, with an official record of 12,172 lbs; Polly Puss, with 12,632 lbs; Rena Ross, with 15,072 lbs.; Netherhall Brownie 9th, with 18,110, and now Jean Armour, with 20,174 lbs.

Breeding Big Crops.—Assistant Secretary of Agriculture Willet M. Hayes, says that our national average yield of wheat should be increased from 15 to 25 bushels per acre. That 10 bushels increase might be secured thru better preparation of the land at a cost of possibly $3 per acre, and that the additional 5 bushels should be gained from breeding and planting better seed at a cost of not over 10 cents per acre. An efficient and reliable system of such breeding up of seeds is described in a new booklet entitled The Chatham System of Breeding Big Crops, issued by the Manson Campbell Co., Dept. 72, Detroit, Mich. The booklet is free to those who write to the above address for it. It contains valuable matter for every grain farmer.

Dairy Barn Equipment.—A new booklet, just issued by the Louden Company, illustrates the well- known Louden line of dairy equipment. This includes the latest improved and sanitary gas-pipe stalls and stanchions, showing method of installing and forms of mangers and drops used. Also the tubular steel and wood-lined stanchions, adjustable steel mangers, stop gates, calf and bull pens, etc. All of these devices are fully illustrated and described, together with suggestions on general stabling and management. The booklet will be sent free to all who request it, addressing the Louden Machinery Co., 683 W. Broadway, Fairfield, Ia.

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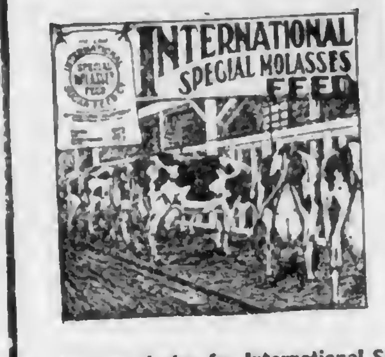

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TERMS OF SUBSCRIPTION
One Year 52 copies to one person $0.50
Two Years 104 " " " " $1.00
Three Years 156 " " " " $1.25
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Philadelphia, Pa., February 15, 1913.

NEGATIVE LESSONS

During the last few years agriculture has broadened in its scope, and has changed so much industrially that new conditions have arisen from which we can get many interesting facts. The health and charm of country life, and the profits of a well-conducted farm have attracted the city man and have in many cases brought him into active competition with his country brother, resulting in very noticeable difference of viewpoint between the two men. The situation presents many points which are equally valuable to both types, and brings out lessons which both should learn. We have known many men who have been born and raised in the city to venture into agricultural pursuits of one kind or another, generally for the same reasons and generally ending at about the same point. The competition and necessary business foresight of city conditions have given these men certain instinctive qualities which have made their agricultural operations strikingly parallel. Their chief aim seems to be towards originality; to hit upon highly profitable, neglected crops, to grow as much of this crop as possible and as often as possible. These are progressive and commendable principles, but let us see how such tactics work on the farm. We know of two men who decided to try ginseng. One man tired of his venture before the third year was up. The second man carried his nine acres during the seven years of preparatory waiting, only to find that his state did not use the output of nine acres of ginseng in almost as many years, and hence had to market it in distant markets at great expense. Another man decided to grow 80 acres of Brussels sprouts, knowing that this crop was worth about $100 per acre, and still another man, hearing that pigeons paid well, equipped a farm for 5,000 pairs the first year. Of course, these men failed, and yet they all followed principles which they had been taught in the city to regard as thoroly sound. Any one of them could have built and equipped a mill to manufacture the special article which he was most familiar with, and made it pay. They overlooked the fact that on the farm they were dealing with factors over which money has no control. There have been many men who have made money with ginseng, Brussels sprouts and pigeons, but they have done it in the same way. They have started gradually, learning the business step by step, and only increasing as profits warranted such expansion, until finally they are masters of a profitable business. The city men had, in all cases, money to back their enterprises, and since the city man usually measures his money by the pleasure he gets out of it, they probably did not look upon their ventures as failures. They undoubtedly discovered a very pleasant way of spending money, but from the agricultural standpoint, they failed. The farmer can learn several lessons from these city experiences. He can learn that to stick by his crops which have always paid him is better than to plunge in new, widely exploited novelties; to do a little well is a great deal better than to attempt a great deal in a careless manner, and, lastly, that money will not make crops grow; it takes hard work, patience, knowledge and brains.

THEORY AND EXPERIMENT

Too often the terms theory and experiment are confused and interchanged. We often hear investigators spoken of as "theorists," while in reality they are primarily experimentalists and secondarily theorists. Practical men are too apt to discard the findings of such scientific investigators as being of questionable value, on the grounds of their being mere theory, and yet it must be remembered that much of the practice has been founded upon theoretical investigations. Hence the man in the laboratory is as essential to further agricultural progress as is the man in the field. But conditions have changed. Not only is the experimentalist receiving credit for the immense amount of benefit he has been to agriculture, but also the "theorist" is recognized as the author of many well-known truths. In view of this, it is encouraging as well as interesting to note the growth which has taken place within the last ten years along the lines of agricultural research. In 1901 the experiment stations had an income of $1,232,000, as compared with $3,615,000 in 1911, and the men enrolled in these stations increased from 688 to 1,587. Analyzing this, we find that the chemists have increased from 146 to 293, the botanists from 49 to 84, the mycologists and bacteriologists from 21 to 60, the entomologists from 48 to 108, the horticulturists from 78 to 131, the animal husbandmen from 14 to 101, and the dairymen from 31 to 77. It is gratifying to note also that not only have the numbers of these men increased, but also the standard and general personnel of the stations. It is very fortunate that we have men of greater ability to meet the ever-increasing complexity of agricultural problems than we had ten years ago. We are facing times which will develop agricultural problems of enormous importance to every human being in the world, regardless of his social conditions, and these experimentalists and investigators must be the men to solve them. Not only have the experiment stations broadened and expanded, but the general facilities for spreading agricultural knowledge have correspondingly grown and become more efficient. The permanent funds and equipment of the land grant colleges (agricultural colleges) have increased from $67,000,000 in 1900 to $120,000,000 in 1911, and their income from $7,000,000 to $22,000,000 for the same dates. In 1901, 2,000 farmers' institutes were held, at which 500,000 people attended. In 1911, 6,000 institutes instructed 2,500,000 farmers, not including about 1,000,000 people who attended lectures from agricultural trains, etc. And when we consider that there are 30,000,000 people in this country who are living on farms, we can see how necessary this growth in educational extension work has been, and what an enormous field presents itself for further development, both along the lines of extension and research work.

PROGRESSIVE LEGISLATION

The House of the Pennsylvania legislature showed unexpected progressive strength on two important measures last week. On February 3 a resolution ratifying the amendment to the Federal constitution providing for the election of United States Senators by direct vote of the people was adopted by a vote of 193 to 3. On February 5 the same body passed a resolution providing for the amendment of the state constitution so as to give women the right to vote by a vote of 131 to 70. These two measures are essentially progressive issues, not necessarily in the modern political application of the name progressive, but they are popular issues in response to the demand of the general public. Other issues in the same class, and which will come up for action by the present legislature are an efficient public utilities act, purification of election laws, ratification of the income tax amendment, etc. To be consistent, the preponderance of progressive strength shown on the two measures passed ought to be behind the other progressive issues, and the people of the state have reason to expect needed reforms from the present House. The division in the Senate is not so well defined as yet. The present Senate has shown a tendency to delay important bills, and it is by no means certain that the popular issues will receive the same measure of support that was accorded them in the House. The responsibility is up to the Senate, and the people expect it to make good. The amendment providing for direct election of United States Senators has been ratified by fifteen states, mainly in the East, and it seems entirely probable that a sufficient number will be recorded in favor of it to insure its becoming a law, even without Pennsylvania. But Pennsylvania voters want their state on the side of this needed reform, and they are looking to their present Senate to place it there. The sentiment in favor of the suffrage bill appears to be practically as unanimous. Even when passed the measure would have to be re-enacted in the next session, and then secure a majority vote at state election in 1915, and regardless of personal opinion or prejudice, the people are ready to test the popular vote on the question. The House has placed itself on record as being responsive to public demands. The Senate has the opportunity to give the state the reforms so long demanded. Will it make good?

A GROWING MARKET

A new and growing market for farm produce which has not received the attention which it deserves is that provided by the canning industry. The old warehouse and storage sheds were the first step toward holding farm produce from the seasons of plenty to the seasons of natural shortage, and they were a big step in equalizing demand for farm products and supplying food products thruout the year. These were followed by the cold storage plants, which introduced new problems in pure food control and market regulation, but which provided the next great advance in economic food supply. The canning industry has been the third great development. Starting with a few special commodities which were readily adaptable to canning processes, the field has been gradually widened until it includes practically all of our common fruits, vegetables and staple food mixtures. The market provided for farm produce in this industry is immense in the aggregate. One large eastern plant made a record production of 1,240,000 cans of vegetable soup in a day last season, and had an average production per day of 1,000,000 cans during the tomato season. This plant has contracted with 250 farmers for tomatoes next season. And this is just one of the many plants operating thruout the east. Without the canneries, this product would have been unsalable, and the area now contributing to the supply of canning products would have been producing the staple articles, which would have gone into an already crowded market. And the canning industry is still growing. The market has been largely confined in the past to this country, with little attention to the foreign field. The Department of Commerce and Labor recently appointed J. Alexis Shriver, of Maryland, as special agent to be sent to Europe to conduct a campaign of education on American canned goods, and this campaign of education holds out wonderful possibilities in the enlargement of the demand, with consequent enlargement of the home production of canning products.

BIRD PROTECTION

A movement in real conservation of natural resources is contemplated in the McLean bird bill, which passed the United States Senate recently. The bill provides for nation-wide protection of migratory and insectivorous birds. The need of such a law has long been urged in those sections of the North where the full economic value of the birds is appreciated. But this is a matter for Federal legislation. One section of the country can accomplish little in the protection of birds which claim both the northern and southern extremes of the country as native habitats in the course of the year. Protection of the robin in the North in summer is of little practical value so long as these birds are being slaughtered as game birds in the South in the winter. And the protection in the North is by no means all that it should be. Stringent enforcement of a Federal bird law which would protect all insect-destroying birds during winter and summer would soon re-populate our orchards and fields with the many varieties which are now rapidly disappearing. Every observing farmer appreciates that these birds are his greatest friends in the suppression of insect pests. The small toll of fruit and vegetables which they take is a small item in comparison with what they save in time and expense in spraying and other means of insect destruction. The bill passed the Senate with no opposition. Farmers should unite in urging its early adoption in the House. A card to your Congressman at this time, asking his support of the measure, will help.

PENNSYLVANIA LEGISLATIVE NEWS

Farm Instructors.—A step to provide farm instruction in field work, supplementary to the farmers' institutes was taken last week when a bill was presented to provide for 10 "instructors in agriculture." The bill requires each instructor to be qualified by actual experience to teach the science of farming in all its branches. The appointments are to be made by the Secretary of Agriculture, and the instruction is to be given at such times and places and under conditions prescribed by that official. The men are to fill a regular schedule, but be available for advice to farmers at all times. Demonstration farms may be established similar to demonstration orchards and the farm counsellors make their headquarters so they can be reached without trouble. The salaries of the positions are to be $1,800 a year. S. Taylor North, chairman of the house appropriation committee, is the sponsor for the bill.

Regulate Crushed Limestone.—Regulation of pulverized limestone, ground oyster shells, artificial carbonate of lime, lime, spraying lime, slaked lime, hydrated lime, marl, gypsum or land plaster is proposed in a bill offered in the house by Mr. Lohr, of Somerset, a practical farmer. Under the provisions of his bill every bag, barrel or package of such material offered for sale for agricultural purposes is to contain a tag with the name and address of the manufacturer, brand or trade name of the material, the degree of fineness, the minimum percentages of available oxides of calcium and magnesium respectively combined as carbonates and other chemicals. This tag is to represent a guaranty of the manufacturer or importer. The act is not to apply to kiln slaked lime, gas house lime or tanners' lime, when sold as such. When the materials are sold by carloads or wagon loads the certificate or tag is to be posted. The tags are to be issued by the Secretary of Agriculture. Violation of the act is made a misdemeanor punishable by fine of from $25 to $100 for first offence, and fine of $200 for each subsequent offence. The act in effect provides a new fertilizer statute.

Cattle Bills.—Two bills are now pending in house committees to take all taxes off dairy cattle. Favorable action in committees is looked for. Another bill prohibits the sale of any milk from cattle fed on refuse of breweries. It is probable that other legislation relative to cattle will be presented with the backing of the Pennsylvania Cattlemen's Association.

Filling of Streams.—W. H. Semmens, of Allegheny, introduced a bill to prevent the dumping of any slag, ashes, cinder, rock, earth or any other material along the banks of a stream without obtaining the consent of the State Water Supply Commission. A bill to regulate dams is also in preparation.

Compiling of Laws.—Pennsylvania will have a compilation of all laws, with the contradictory and antiquated statutes indicated if a bill in hand is signed by the Governor. This measure provides that the State Legislative Reference Bureau shall study the subject. The laws of this state are in confusion in many instances because of the unrestrained manner in which laws are passed by the legislature. An instance may be found in the vetoes of last session, when four bills were vetoed for the simple reason that they duplicated what was already on the books. If some of the laws now on the books were enforced it would put many people out of business.

Pure Food Bills.—A battle is pending on pure food bills. The bills prohibit the use of any preservatives, and the interests which supply such materials are sending attorneys and representatives to fight the measures. The battle lines are drawn at the start of the series of hearings this week, and efforts to defeat the bills will be made. The state administration is committed to support the bills.

Rates on Lime.—The State Railroad Commission has been asked to look into the charges made for transportation of lime in Blair and adjoining counties. S. H. Dean, of Williamsburg, charges that lime sent to a mill is rated as chemical lime and charged for at 40 cents a ton, while the agricultural lime is charged for at a rate of 70 cents. The haul was the same distance. The case will be investigated this month, and the recommendation may be of far reaching consequence.

Bounties on Hawks and Porcupines.—Two proposed amendments to the game bills now in the hands of house committees place bounties on hawks and porcupines of 50 cents each. The bills re-enact the bounties on wild cats, foxes, minks and weasels and add to the list the various hawks and the porcupines. The argument is that both are destructive and that the state should provide funds for their extinction.

No Oleo Bills.—Up to date nothing has been heard of the rumored bills to allow the use of coloring matter in oleo and to reduce the license fees. These bills are said to be in contemplation, and will be fought by the State Dairy and Food Division and the grange interests. They have been very successfully kept under cover.

State Fair Bill.—The bill for the creation of the State Fair Commission, which was recommended to the house by the committee on agriculture, is to be sent to the appropriation committee to provide the funds. A strong effort to secure the $500,000 appropriation will be made.

Hospital Buildings.—The action of the State Board of Public Charities in refusing to recommend any more money for construction of buildings or additions to hospitals is believed to mark the beginning of a campaign of cutting down state aid to charities and to make them more dependent upon local contributions. The aggregate of the recommendations, which include only buildings for purely state institutions, is $12,098,589.66, or $116,000 less than granted in 1911.

Road Maintenance.—It is understood that the estimate for maintenance of the state roads for the two years commencing June 1 will be $2,000,000. This will cover every state highway, and provide work for something like 3,000 men under direction of the State Highway Department.—Hamilton, Harrisburg, February 10.

MARYLAND AGRICULTURAL COLLEGE

At a meeting of the City-Wide Congress of Baltimore, held on January 24th, a committee, headed by Mr. Herbert Sheridan, Traffic Manager of the Baltimore Chamber of Commerce, presented a report on the Maryland Agricultural College and its relation to the general educational system of the state. The destruction by fire of the chief dormitory of the college, together with the resignation of its president, Capt. R. W. Silvester, has again brought this institution prominently before the people of Maryland.

The City-Wide Congress, a federation of all the business, improvement and civic associations of Baltimore, was organized March 10, 1911, as a simple practical plan "to modernize and systematize all the activities and purposes of the city. It claims that practically all of the people of Baltimore desire to have the best city possible, and that they need only intelligent organization and co-operation in order to get it. The prime object, hence, is to stimulate and organize this spirit of co-operation by studying, thru conference of experts, the city's immediate and future needs; by deciding, thru a truly representative central body or directorate, which of those needs should enlist immediate attention; and by bringing, thru an effective organization, intelligent and widespread support to the project thus endorsed."

The City-Wide Congress is a very influential body. Its investigations, reports and resolutions invariably command careful consideration. The report on the Agricultural College, after reviewing the history of this institution, which was organized in 1856 by private enterprise, and therefore lays just claim to the distinction not only of being the oldest agricultural college in the United States, but also the first to have made provision, both for experimental and investigational work, as well as instruction in agriculture, described the present status of this institution, which now has a semi-public character.

Basing its right to discuss this matter upon the interdependence of city and country, which Baltimore, like most large cities, failed to appreciate until the present high cost of living had forced it upon its attention, the report frankly admitted that this college has hitherto failed to avail itself of the unique advantages presented by its favorable location near the Federal Capital, with its Department of Agriculture, Experimental Station, libraries, museums and opportunities for general culture, as well as opportunities for advanced scientific study in agriculture. The responsibility for any failure to utilize these advantages for the development of the State's agricultural resources rests not so much upon the faculty or college authorities as upon the state itself which failed to make adequate provision for the support and upbuilding of that institution upon whose leadership such development largely depends. The necessity of making such provision thru a regular tax levy instead of by spasmodic appropriations was emphatically urged.

Discussing the future policy of the institution, the report pointed to the fact that every successful agricultural college owed its prominence to the emphasis placed in its teaching and investigations upon some phase or feature of agriculture. Thus Cornell emphasizes horticulture; Wisconsin, dairying; Iowa, stock raising; Illinois, grass, corn and grain; Pennsylvania, general farm products. By reason of its proximity to the large centers of population on the Atlantic seaboard, as well as favorable soil and climatic conditions, Maryland should emphasize the growing of table foods—trucking, horticulture, milk, fish and oyster culture. Since the state has made a large appropriation for the establishment of a technical school in connection with Johns Hopkins University, the Agricultural College should specialize in rural engineering and farm mechanics, for which the diversified topographical conditions of the state offer great advantages. Thus the many streams which rise in the foothills of the Alleghenies, to flow thru the tidewater counties and empty into Chesapeake Bay, offer splendid opportunity for the cheap development of electric power and its application to lighten labor and increase home comforts on the farm.

After adopting the report, the congress passed resolutions requesting the governor to call a public meeting, inviting the attendance of all organizations and interests of the state, which might be combined to promote the agricultural interests of the state under the leadership of the Agricultural College, whose trustees are requested to present a report on plans for the organization and extension of the institution as a basis for discussion at this public meeting. Such a report was recently prepared by Director H. J. Patterson, of the Maryland Experiment Station, and approved by the trustees. Copies of the report, which has been printed in full, may be had from Mr. Herbert Sheridan, Traffic Manager, Chamber of Commerce, Baltimore.—S.

DR. ARMSBY RETURNS TO STATE COLLEGE

Dr. Henry P. Armsby, head of the Department of Animal Nutrition at the Pennsylvania State College, returned last week after a six months' absence abroad. Dr. Armsby, while in Europe, visited several institutions in Germany, with a view to looking over their equipment and methods of work connected with the respiration calorimeter. He has, during the past few years, carried thru a series of interesting experiments with the calorimeter, and his reports of his investigations abroad are to the effect that State College is superior in this branch of experimental and research work to the institutions visited by him in Germany and Austria. In fact, Dr. Armsby was surprised at the results of his investigations abroad, and has come home, feeling a just pride in the animal nutrition work as represented at State College. He was tendered a dinner at the College on February 3, by the members of the agricultural faculty, at which he gave, in some detail, the conclusions he had arrived at as a result of his trip.—C. M. Arthur.

INSTITUTES FOR THE WEEK

February 17-18, at Blooming Glen, Bucks Co., R. P. Kester, S. W. Funk and Mrs. J. K. Foulke. At Trough Creek, Huntingdon Co., J. T. Campbell, F. W. Card, M. H. McCallum and E. S. Fowler. At Millertown, Allegheny Co., F. Menges, F. H. Fassett, Dr. M. E. Conard and Frank Kline. At Westfield, Tioga Co., L. W. Lighty, J. A. Runk and W. T. Wittman, and at Valley View, Schuylkill Co., D. H. Watts, C. T. Cornman, Dr. J. H. Funk and Prof. F. R. Stevens.

February 19-20, at Pineville, Bucks Co., R. P. Kester, S. W. Funk and Mrs. J. K. Foulke. At Merklesburg, Huntingdon Co., J. T. Campbell, F. W. Card, M. H. McCallum and E. S. Fowler. At New Texas, Allegheny Co., F. Menges, F. H. Fassett, Dr. M. E. Conard and Frank Kline. At Genesee, Potter Co., L. W. Lighty, J. A. Runk and W. T. Wittman. At Friedensburg, Schuylkill Co., D. H. Watts, C. T. Cornman, Dr. J. H. Funk and Prof. F. R. Stevens. At Summit Station, Schuylkill Co., the same speakers will be present.

February 21-22, at Newtown, Bucks Co., R. P. Kester, S. W. Funk and Mrs. J. K. Foulke. At Petersburg, Huntingdon Co., J. T. Campbell, F. W. Card, M. H. McCallum and E. S. Fowler. At Imperial, Allegheny Co., F. Menges, F. H. Fassett, Dr. M. E. Conard and Frank Kline. At Shingle House, Potter Co., L. W. Lighty, J. A. Runk and W. T. Wittman. At Strausstown, Berks Co., D. H. Watts, C. T. Cornman, Mrs. Edith E. Smith and J. A. Herr.

COUNTRY LIFE COMMISSION FOR MARYLAND

At its last session the Maryland legislature authorized the appointment of a Commission on Country Life, directing this commission to make a careful and thoro study of rural conditions in the state, with the view of recommending such legislation as may be needed to improve the conditions of life in the country as distinguished from life in the city. Governor Goldsborough recently announced the names of the members who have consented to serve on this commission. They are:

Willet M. Hays, Assistant Secretary of the Department of Agriculture, chairman. Mr. Hayes is a resident of Montgomery County. Perhaps the most highly organized rural community in the state is the famous settlement of Friends at Sandy Springs, Montgomery County.

E. E. Osborne, now a resident of Frederick County. Mr. Osborne, who was formerly chief counsel and vice-president of the Chicago and Northwestern Railroad, and is now a successful farmer, originated and directed the famous "back-to-the-farm" movement successfully carried on by that railroad.

W. Irving Walker, a successful farmer and business man of Queen Anne's County.

Jerome Davis, another successful farmer, a resident of Caroline County.

Robert Crain, a lawyer and business man of Baltimore, has a very large farm in Charles County, to the development of which he is devoting large sums.

[illegible] Reindollar, a business man and farmer of Carroll County.

Henry J. Bowdoin, a resident of Howard County, where he has large landed interests.

Mr. Bowdoin and Mr. Walker were very active in urging the passage of the bill authorizing the appointment of this commission. Unfortunately, the legislature saw fit to cut out that part of the bill which provided for an appropriation to defray the expenses connected with the work of the commission, or rather the paying of a permanent secretary. It is hoped that the necessary funds for the proper organization of the commission's work will be raised by private subscription.—S.

LEBANON COUNTY INSTITUTES

Lebanon County, one of the rich southeastern counties is noted for its good crops and fine lands. The people of Lebanon County boast that nowhere in the entire United States can be seen so many fine farm buildings as from the railroad train in traveling between Reading and Harrisburg. These people can justly feel proud of their county, for it is everywhere covered with the same type of fine farm buildings. In this county is located the Hershey Chocolate Company, one of the most beautiful manufacturing plants to be found anywhere. Many of the farms are producing milk for this large concern.

Much of the land is limestone and very fertile. General farming is carried on to the greatest extent, altho in some sections tobacco is grown. The institutes in this county were well attended, particularly at Schaefferstown, which is one of the oldest towns in the county. Here was formed the first public water company in the state. In this town is also located an old hotel with a large cellar, built in 1744, which was used by many of the earlier settlers as a protection against the Indians.—S. W. F.

RECONNOISSANCE SOIL SURVEY OF SOUTHEASTERN PENNSYLVANIA

The field work of the reconnoisance soil survey of southeastern Pennsylvania, made by experts from the Bureau of Soils, has been completed and the report will be issued during the latter part of the coming summer. The work was done for the purpose of showing the agricultural value of the soils of the area and what crops they are best adapted to. The adaptability of the soils to fruit production will be especially touched upon in the report. The territory covered by the survey amounts to 10,250 square miles, and embraces the counties of Northumberland, Montour, Columbia, Luzerne Monroe, Carbon, Northampton, Schuylkill, Lehigh, Bucks, Berks, Lebanon, Dauphin, Lancaster, York, Chester, Delaware, Philadelphia and Montgomery.

The report, when printed, will treat exhaustively on the soils and their characteristics, what crops they are particularly adapted to, and how they should be treated and managed in order to obtain the best possible agricultural results. A soil and topographic map will accompany the report, showing in colors the location and extent of various types of soils encountered during the survey, as well as the location of all farms, school houses, churches, public roads, streams and railroads in the counties.

NOTES AND QUERIES

Government Road Work.—The latest bulletin of the Office of Public Roads, United States Department of Agriculture, discusses the work of that department in road improvement. It shows that 8.66 percent of the roads of the United States were improved at the close of 1909, making a gain of 1.52 percent in the preceding five years. It also estimates that close to 10 percent were improved at the close of 1912. In the five years ending with March, 1912, the Office of Public Roads built 215 object-lesson roads, about 300 miles of road, 15 feet wide, and aided in the formulation of 650 other model roads. It has assisted 26 states in effecting equitable state-aid plans.

Saving Time on the Farm.—One of the greatest leaks on the farm is the loss of time and energy thru the lack of proper tools. It would pay every farmer to try to calculate the time and labor actually wasted each year thru the lack of tools. This would be the surest method of arriving at a decision as to what tools were actually needed. In the market garden, for instance, a Planet Jr. hand-tool, combining seeder, wheel-hoe, cultivator and plow in one pays for itself in a remarkably short time in the time saved, and does away with much of the drudgery of the work. In extensive field culture, the Planet Jr. cultivators, which work two rows at a time, save time and labor, as do also the smaller single cultivators in smaller areas. A new illustrated catalog, recently issued by S. L. Allen & Co., Box 1202 E, Philadelphia, Pa., describes minutely the implements to use for scientific cultivation and tells the particular tools adapted to the different kinds of crops. It will be sent free upon request to anyone writing for it to the above address.

Pig Ration.—I have two pigs, 3 months old, that are fed meal, milk and table scraps. They do not thrive as they should. How can I improve the ration? E. M. K., Grand Valley, Pa.—The feeds named should keep the pigs thrifty and growing, if sufficient quantity is fed. Reader does not say what kind of meal is fed. It is probable that the addition of corn would cheapen the ration and give good results. If feeding tankage can be secured, the addition of about one pound per day for each hog would help. Perhaps a tonic is needed, in which case feed a teaspoonful of ground gentian to each pig, twice a day. Put the gentian in their feed.

Aberdeen-Angus Report.—Report of the 1912 annual meeting of the American Aberdeen-Angus Breeders' Association is now ready for distribution. It reports on general conditions of this flourishing breed association and gives interesting notes on Angus winnings. For copy or further information, address Chas. Gray, 817 Exchange Avenue, Chicago, Ill.

Suffrage Bills in State Assembly.—A woman suffrage bill has been introduced in both branches of the Pennsylvania State Legislature. The bill was passed, 131 to 70, in the House on February 5, but is still held by committee in the Senate. Should the bill pass in both branches, it will have to be held over and repassed by the next session, and then submitted to the people in November, in 1915.

Engineering Colleges Organize.—The engineering divisions of the land grant colleges formed an association at a recent meeting at Washington. The purpose of the association is to deal with the problems peculiar to such institutions and to co-operate with the agricultural associations of such colleges. Prof. J. P. Jackson, Dean of the School of Engineering, Pennsylvania State College, was made president of the new organization. Attention will be given to ways and means of making the engineering divisions of maximum service to the farming interests of their states along the lines of application of power to the farm, handling of machinery, methods of drainage, operation of motors and tractors, etc.

Agricultural Fairs.—A recent government bulletin lists 2,740 agricultural fairs in this country. There are 839 county fairs, 466 inter-county fairs, 250 covering less than county areas, 200 interstate fairs, 155 state fairs, 129 national fairs, 102 international and 599 unclassified.

Farm and Garden Implements.—The new catalog of the Planet Jr. farm and garden implements describes and illustrates this famous line of tools. It shows the uses of the Planet Jr. tools in all of the common crops in this country, and illustrates their wide use abroad. The booklet is an education in the use of horse and hand machinery. It is sent upon request to the S. L. Allen Co., Box 1202E, Philadelphia, Pa.

Guaranteed Trees.—The new 1913 catalog of Maloney Bros. & Wells offers a full line of orchard and small fruit trees and bushes. These are all sold under a guarantee which should appeal to all growers. Catalog and full particulars will be sent free upon request. Address Maloney Bros. & Wells Co., 88 Main St., Dansville, N. Y.

Roofing Material.—A new booklet, Genasco Roofing Over All, is a beautiful piece of printing work showing the uses of Genasco roofing material. This roofing has stood the test of time and is recognized as a standard, and this new booklet shows its adaptability of uses and its service in all countries and under all conditions. The booklet will be sent free upon request to the Barber Asphalt Paving Co., Philadelphia, Pa., if you mention Pennsylvania Farmer.

Small Gardens for Small Folks.—This is the title of a delightful little book by Edith Loring Fullerton, of Long Island. The book is just what its title implies, a story of how to make small gardens, written for small folks. The subject matter is thoroly reliable and accurate, but is written in a bright and attractive style which will appeal to the little people. It is divided into four chapters, the first dealing with making the garden, the second with vegetables, the third with the flower garden and the last with bugs and blights and how to fight them. By special arrangement the W. Atlee Burpee Co., Burpee Buildings, Philadelphia, Pa., has arranged to furnish this book at small cost. Full details will be sent free upon request to the above address. Say you are a reader of Pennsylvania Farmer.

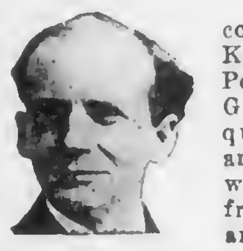
Litter and Feed Carriers.—Among the various lines of time and labor savers about the farm and buildings, few have proved more efficient and useful than litter and feed carriers. A new catalog from the Louden Company shows the latest improvements on these carriers, showing various lifts, tripping devices, shapes of boxes, and adjustments for all purposes. The Louden machines are backed by years of successful operation and are known all over. The booklet will be mailed to you upon request to the Louden Machinery Co., 683 W. Broadway, Fairfield, Ia.

AVERAGE ACRE YIELDS

The Crop Reporter for December reports on crop statistics for the last three years. Comparative yields and acreage in different states for the different years make an interesting study. The average acre yields for leading crops in Pennsylvania, New York, New Jersey, Delaware and Maryland are as follows:

Crop.	Pa.	N. Y.	N. J.	Del.	Md.	U. S.
Corn, bu.	42.5	38.6	38.0	34.0	36.5	29.2
Wheat, bu.	18.0	16.0	18.5	17.5	15.0	15.1
Rye, bu.	17.	16.5	17.5	14.0	15.5	16.8
Buckwheat, bu.	24.[illegible]	23.8	22.0	16.0	17.5	22.9
Potatoes, bu.	[illegible]	106.0	108.0	100.0	112.0	113.0
Oats, bu.	[illegible]	30.8	27.6	30.5	30.0	37.4
Hay, tons	[illegible]	1.25	1.44	1.33	1.51	1.47
Tobacco, lbs.	[illegible]	1,300.	....	....	660.0	785.

Grange



This department is conducted by R. P. Kester, Lecturer of Pennsylvania State Grange. Notes, queries, comments and news of grange work are invited from readers. Obituary notes and news of purely local interest can not be used. Address all communications for this department to R. P. Kester, Grampian, Pa.

NEW YORK STATE GRANGE MEETING

The New York State Grange assembled in 40th annual session at Buffalo, on February 3. The attendance was the largest in the history of the grange of this state, the voting strength being about 525. State Master W. H. Vary, in his opening address, remarked that it is "absolutely essential to avoid any entanglements of the order with any political party," and took the ground that "an officer of the State Grange could not serve the order and his party at the same time." Concerning co-operation, Mr. Vary said that it has been a part of the grange code since its organization, but there are many obstacles in the way of successful co-operation. Selfishness, a disposition to wait and let others experiment, are the chief obstacles to success.

The work of the New York State Grange Purchasing Agency was commended and all granges urged to appoint local agents who are in full sympathy with the movement. The amount of business is considerable, but not what it should be with 800 granges in the state. Two grange measures have passed Congress in the past year, the one for the popular election of United States Senators, and the other, parcel post. In state legislation, the grange looks with favor upon the bill which provides for the licensing and bonding of commission merchants. Concerning the Canadian reciprocity law, which is still on our statute, it should be promptly repealed, as "it is a menace to the farm interests of the country so long as it remains there." The speaker urged all members of the grange to support the Haugen oleo bill, now before Congress, and to oppose the Lever bill.

On the question of good roads, he favored good roads and plenty of them, but opposed the system of building costly roads that do not stand the wear and tear of heavy traffic. Too large a portion of the funds appropriated for highway purposes is expended in unnecessary preliminaries and useless and expensive engineering. In many parts of our state good, substantial roads can be built for as many hundred dollars as thousands are required for the more expensive boulevards. A large part of the $50,000,000 bond issue was diverted from the purpose for which it was intended and what the people expected when they voted for the bond issue. This has been done by special legislative enactments apparently in the interests of individuals. The proceeds of these bonds have been practically used up. It is gone, and we have no remedy or redress, but possibly a lesson that will be beneficial in the future.

Secretary's Report.—State Secretary W. N. Giles reported 815 subordinate granges in the state, a net increase of 31 since the last annual meeting. In the 781 granges from which reports were received prior to October 1, 1912, there are 103,665 paid-up members, but including members in arrears, the total membership on October 1 was 104,683. Among the largest grange counties in the state counting paid-up members to October 1, 1912, are Jefferson with 7,715, Chautauqua with 7,486, Monroe with 5,292, St. Lawrence with 5,206, and Wayne with 5,192. There are only four dormant granges in the state. The total number of Pomona or County Granges is 40. The total amount of receipts of the secretary's office the past year was $30,202.97.

Treasurer's Report.—State Treasurer W. L. Bean, reported a balance on hand January 1, 1912, of $26,509.39. Receipts from the secretary's office of $30,203.97; accrued interest, $646.38, making a total of $57,359.74. The total disbursements of the year have been $29,439.22, leaving a balance on hand January 1, 1913, of $27,920.52.

INCREASING PRODUCTION

There has developed in the past few years a very general interest in the education of the farmer. Nation, state and big-business men have turned their attention to the task of increasing the farmer's working knowledge, so that he will be able to produce more. The intelligent farmer does not deny the need of this greater efficiency, nor the moral responsibility resting upon him to furnish the world its food; but he feels that his increased intelligence and better methods should be rewarded by receiving the benefits of the increased production. That he does not receive it is shown by the fact that in years of abundant crops the total amount received for the big crop is little if any more than the amount received for a crop in a lean year.

By common consent, effort has been made to insure good business conditions and stable prices, so that Big Business could continue and profit. The present period of unusual production in manufacturing is undoubtedly returning satisfactory profits, thanks to the co-operation and good business system among them. Let those who are so much interested in aiding the farmer to produce more remember this: He is now able to do it and would do it if he could feel reasonably sure that he would receive pay for it. Production and prices have always operated like the ends of a teeter board, when one is up, the other is down. The history of agricultural success in this country has been the story of individual successes. In fact, the fortunate succeed largely because others did not succeed so well.

Nearly every other business passed thru the same experience, then began to co-operate. That they have abused the advantage thus gained is no argument against the fundamental principle. Co-operation to insure stability and to lower cost of production— to eliminate unnecessary expense—is in the line of the natural evolution of business, and no power can put it back to the cut-throat competitive basis.

But farmers are not yet organized fully to co-operate. They are the one big class of business men not co-operating, and until they do, their fortunes will be at the mercy of the law of supply and demand, a law which the Irishman said "ought to be repealed." Let no one think that the object of the grange in urging co-operation among farmers is for the purpose of increasing the cost of living to the consumer, but it is rather to reduce it by economical production and intelligent and business-like methods of storing and distribution. Let the government, state and national, as well as our agricultural colleges, give some attention to this phase as well as to increasing production.—R. P. Kester.

McSPARRAN'S GRANGE NOTES

The Income Tax

The joint committee of Senate and House at Harrisburg, appointed at last session to consider and report upon a revision of corporation and revenue laws, presented its report to the legislature some days ago. There are some good changes suggested in the report, among which is the recommendation for protecting the small investor against "investment companies" and "get-rich-quick" schemes. The report suggests the blue sky law of Kansas, adopted by that state in 1911, and urges its passage by the Pennsylvania legislature. We hope it will become the law in this state at an early date.

I am sorry not to be able to say amen to the report of the committee upon the subject of the Federal income tax amendment. The Grange has for years been in favor of a graduated income tax. Here is what the committee says upon the subject:

"Your committee is of the opinion that this change in the relation between the states and the Federal government is unwise, and that it would be unwise for Pennsylvania to lend her approval to it, because, as one of the wealthy states, she would bear far more than her proper share of the burden. Notwithstanding the fact that only two states more are needed, and the certainty that they will be found among the ten states that have not acted, makes it idle for Pennsylvania to say 'aye' or 'no' to the proposition, and tho such states as Illinois, New York and Ohio, which share with Pennsylvania and Massachusetts the great bulk of the wealth of the country, and which will pay the greater part of the tax, have approved it, yet your committee recommends that the legislature, as a matter of principle should refuse to ratify the amendment.

"That this commonwealth should join in authorizing Congress to pass laws taking vast sums of money from our citizens to be expended in other states from which our people can derive no special benefit, and none at all save so indirectly as to be practically unappreciable, is beyond reason, unless it be a reason that wealthy states should pay for the upbuild of those less fortunate, no matter how remote. If taxes could be limited to the needs of the country's defence, there would be no opposition, but to turn our people over to Congress to impose such taxes, and for such purposes as it may see fit, in this age of general demand for all kinds of expenditures under the guise of 'progress,' and in the face of the needs of our commonwealth, is little short of reckless and foolish."

The position taken by the committee recalls the fact that it was Pennsylvania that, years ago, when the subject was before the Supreme Court of the United States on the question of constitutionality, blocked the act passed by the Federal Congress. It was Justice Shiras that changed his vote and turned the decision from a 5 to 4 in favor of the act to a 5 to 4 against it, and now when the proposition is referred to the several states, Pennsylvania again is against it and for a very selfish and trifling reason.

The necessity of taxation is apparent, and that the burdens of government should be distributed as evenly as possible is also evident. But it is just as true and even more apparent that many people are paying more than their share who are compelled to pay it out of a hard-earned living and not out of a comfortable increase of profit, called an income. The righteousness of the principle of the income tax lies in the very fact that it does ask the strong to help the weak. Of course, it would not be right to saddle the whole cost of government upon the financially successful man or woman; but when it is remembered that many of the large incomes of this country are due to advantages gotten from the state or nation thru special privilege legislation, it is only just that the greater advantage received from the government should bear a greater share in maintaining the power that granted the privilege.

It is all bosh to claim that these large incomes are due, as a general rule, to superior business ability. Almost any middle-aged man or woman can remember the time when a millionaire was looked upon as a wonderful exception; now they can be counted by the thousand. It can not be possible that superb business ability was only the progeny of the last two generations, and the present centralization of so much of the money of this country proves, beyond the shadow of a doubt, that our laws have been manipulated for the benefit of the classes as against the masses. And, therefore, it is entirely just to require these large incomes to support the power that made them until such time as our citizens shall use enough discernment to distribute the benefits of government equally and impartially. The committee, by their argument in this instance, appear to go on record as opposed to indirect taxes altogether. There is no indirect tax that is laid or can be laid equally upon everyone. The tariff tax is paid by the consumer in proportion to his consumption. The internal revenue tax has the same application. The more a man smokes, the more he has to pay for the privilege of so doing. The more a man damns himself drinking whiskey, the more tax he pays the government for allowing him to destroy himself and his family.

As to the richer states paying money to help the poorer sections, it is only necessary to say that the same injustice holds between the richer and poorer counties within the state, and yet I venture that the committee would not oppose a state revenue measure upon the argument that some counties would be required to pay more than others. And as to the manner of expending money collected by taxation, I rather feel that Pennsylvania has not much to boast of in the way of a record for honest expenditure of public funds, and I surely think that this committee has been closely enough associated with authorizing these state expenditures for some time to have lost their distrust of those who oversee the spending of the Federal revenue.

It is to be hoped that enough other states will ratify the amendment to make it valid, and it is also to be hoped that this legislature will respond sufficiently to public justice and equity to set aside the report of the committee and erase from the record of Pennsylvania its stultifying relation to this question in bygone years. This committee is composed of men of experience, and it is to the credit of Speaker Alter that he disagreed with this action of the committee, so shallow and trifling for men of their caliber and experience.—John A. McSparran.

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Why Eastern Farmers Should Breed Better Horses

Eastern farmers are alive to the fact t it is possible to increase the ef-ency of team work and hired labor employing large horses and heavy plements. The whole tendency in rming is to use heavier implements every kind of work. The soil is rred deeper than was considered nec-ary during its virgin vigor. There an ambition to accomplish the most rk with the least expense for labor. ch man must do as much work in a y as possible, for hired men are rce. Four horses are all that one n can handle to good advantage, for numbers increase the horses get in ch other's way in the field, and are re difficult to control and guide with curacy. There is greater economy in creasing team power by increasing e size of horses, rather than by add-g to their numbers. On many farms oduction is curtailed by lack of ef-ient work teams. Good farming is possible without good horses.

Conditions have developed thruout o eastern states that demand that rmers devote more attention to this ase of farm management. Figures ow conclusively that the supply of itable farm teams is woefully inade-ate to the demand. There is no ubt about all this, and when these rcumstances are taken into account, is plain that it is about time eastern rmers saw the light more clearly and t about supplying their needs so far suitable teams are concerned.

As a general proposition, a farmer n raise better horses than he can af-rd to buy. The colts from his mares, e product of one stallion, will mate ore closely in disposition and be bet-r adapted to his work than horses at he can buy, one or two in a place. here is something about the working horses that match in size, strength d disposition that makes the work uch easier for both men and teams. is difficult to buy well-matched teams farm horses, and the necessity of aking up two, three and four-horse ams makes it very desirable to have a t of uniform horses, all of the same e and disposition. This can best be complished by breeding a few uni-rm mares to one stallion. The surer ay of matching horses is to breed em. It requires persistent effort and n adherence to one type until the pur-se is accomplished.

The farmer who goes into the busi-ess of raising a few good colts each ear should do so with the firm resolve patronize the best stallion within easonable distance of his farm, and o continue his breeding operations on moderate scale each year, thru good imes and bad. It seldom pays to keep ore mares for breeding uses than can e furnished with steady, profitable ork during the greater part of the ear. Horses should have work. This the main argument in favor of farm-rs keeping well-bred mares. Farmers eed their work, and the work with in-elligent management agrees with the ares. Many farmers are employing ares for farm work, and they are reeding every year and raising strong, rowthy foals. More mares are abused tanding in idleness than at work on he farm. The draft mare must exer-ise to properly develop her breeding ualities, and, as a rule, she will get ore moderate exercise at work on he farm than when she is given the un of the yards or pasture for an oc-asional frolic, and runs and jumps nd kicks, slipping and straining her oft muscles. She is far more likely to njure herself in this way than by per-orming work on the farm to which her ardened muscles are accustomed.

The better class of Percheron stal-ions that are imported from France re mostly the progeny of mares owned y thrifty farmers, who can afford no uch luxury as big, strong, idle mares. The well bred draft mare is one of the est investments for the eastern farmer f he will give her the right kinds of oods and furnish her with steady, prof-itable work during the year. She will do nearly a full year's work and raise colt besides. If she is mated with a uitable stallion, the colt at weaning ime will be worth as much as it has ost to maintain the mare during the ear; leaving her work as so much lear profit.

The improvement of horses on east-rn farms must necessarily be slow, be-ause the downward drag of the inferior blood in the farm mares on the generality of farms is too much for one mating to overcome. It is only by the continued use of the best stallions of some one breed that one can make a short cut to reach greater average size and quality. Even this requires years of time. It pays to patronize a high-class stallion of the particular breed that meets the demands of your locality. The best breed is usually the one that you like best. If one has grade mares, he should mate them with some high-class stallion whose breeding coincides with the breeding of the mares. The use of good stallions from any of the leading breeds will improve the quality of the grade horses of any community.

The stallion should not only be a good individual, but a true representative of his breed. Soundness should be the basis of the selection of a draft stallion. The next matter of importance is the type and general knowledge of the essential requirements of a draft horse. Having in mind these points, we should next look to the size, quality, bone, action and general make-up and carriage of a high-class sire. It is not possible to find a perfect stallion, but one should secure as many of the essential requirements as can be combined in one horse. Every animal has some defect, be it large or small. The defects in the mare should therefore be carefully noted, and the sire selected should be especially strong in points where the mare is weak. A farmer may be able to get a sire of the type he wants in his own locality. It may pay him to go some distance to get what he wants, and when he finds it, there should be no haggling over the service fee. A few dollars count for very little if a sire can be secured suited to the type of the mares that are to be mated. The increased value of the colts will soon make up the additional service fee. It does not cost any more to grow and develop a good colt than an inferior one.

In the selection of the stallion, a man is governed largely by his personal fancy or his needs. In the absence of owning high-grade mares, which would, of course, determine his breed selection, the demands of the trade which he purposes to supply should control his selection. It is better for the farmers of one community to use the stallions of one breed than to mix the breeds. A uniform lot of well-bred colts appeals to buyers from a distance and will command higher prices.

The problem of producing suitable farm horses is one that should interest every farmer who could profitably raise good colts. It is not so much a question of whether a 1,200-pound horse or a 1,600 pound horse is better adapted to our present needs as it is the wisdom of breeding and developing a class of horses that will do the best work on the farm and bring the most money when we have one to sell. The demand for heavier farm machinery, which has prevailed for the last few years, is sure to necessitate a corresponding increase in the size of the farm work horse. Light horses tugging in the collar, pulling out-of-date plows, harrows and cultivators can not perform as good work as the heavy horses with modern implements. Then there is the matter of good hired men being attracted to a farm where good teams and modern equipment are used. The man who can be entrusted with the handling of good horses and farm machinery can earn more money for his employer than the "Weary Willie" whose capacity is measured by a pair of plug horses and antiquated tools.

Then there is the matter of pride and satisfaction that it gives a man to own good horses and modern equipment. In the first place, people driving by the premises and viewing these good heavy horses at work will be at once impressed with the fact that the owner knows his business. A glance at their precise work is evidence of this fact. In the second place, there is good money in breeding and developing good horses. If there is any branch of stock breeding and feeding that will pay better profits when it is properly managed, within certain limits, than breeding the right kind of horses it has not yet been given a place in American farming. In the face of these facts, it seems strange that farmers in the eastern states will persist in breeding horses that nobody wants, not even they themselves. Good profits await thousands of farmers who will raise good young teams to sell to other farmers. One does not have to look about for buyers—they will come to him—W. Milton Kelly, Erie Co., N. Y.

LIVE STOCK IN PENNSYLVANIA

A bulletin giving a list of the owners of registered live stock in Pennsylvania, together with their addresses and the number of animals owned, has been published by the State Department of Agriculture this year in connection with the list of registered stallions which has been issued for several years. In the words of Secretary of Agriculture Critchfield, the "purpose of the bulletin is to place such information in the hands of Pennsylvania breeders that they can get what they want without going outside of their own state." The information was secured thru assistance by pedigreed stock associations, together with individuals. The list is necessarily not complete, but is a step toward obtaining what has long been desired in this state.

The summary shows 1,285 registered horses, 14,939 cattle, 4,287 sheep and 1,671 swine. The division of the classes is as follows:

Horses	Number
Arabian	3
Belgian Draft	106
Cleveland Bay	1
Clydesdale	19
French Coach	2
French Draft	16
German Coach	2
Hackney	140
Morgan	29
Percheron	480
Saddle horses	4
Shire	69
Suffolk	3
Thoroughbred	151
Trotting	100
Asses	2
Shetland ponies	158
Total	1,285
Cattle	
Aberdeen-Angus	257
Ayrshire	938
Brown Swiss	194
Devon	103
Dutch Belted	14
Guernsey	2,525
Hereford	61
Holstein-Friesian	6,269
Jersey	2,856
Polled Durham	76
Red Polled	183
Short Horn	1,463
Total	14,939
Sheep	
Black-faced Highland	6
Cheviot	49
Cotswold	48
Dorset	346
Hampshire-Down	340
Leicester	21
Lincoln	16
Merino	1,944
Oxford Down	54
Shropshire	1,192
Southdown	174
Suffolk	11
Tunis	31
Angora Goats	13
Milch Goats	42
Total	4,287
Swine	
Berkshire	691
Cheshire	31
Chester White	304
Duroc-Jersey	247
Hampshire	17
Mule Foot	9
O. I. C.	83
Poland-China	197
Tamworth	32
Yorkshire	60
Total	1,671

Grinding Feed.—The question of grinding grains for dairy and beef cattle has received a great deal of attention from station men, as well as practical farmers. One station found that there was as much as $22.50 saved per dairy cow per year, thru the use of ground grain; in other words, that a cow fed ground grain earned $22.50 more than when fed whole grain. All stations agree that grinding pays when it can be done at no great expense of time or money. In the narrow margin between profit and loss in the feeding business these days, the advantage due to grinding often proves the deciding factor and makes the profits of the year's work. Farmers who are using the Quaker City Mills, made and sold by A. W. Straub Co., Dept. A-4, 3735 Filbert St., Philadelphia, Pa., are finding a method of gaining this increased profit at small cost. Free descriptive matter and circulars will be sent free upon request to the above address.

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THIS O.I.C. SOW WEIGHED 932 LBS. AT 23 MONTHS OLD IONIA GIRL

I have started more breeders on the road to success than any man living. I have the largest and finest herd in the U. S. Every one an early developer, ready for the market at six months old. I want to place one hog in each community to advertise my herd. Write for my plan, "How to Make Money from Hogs." G. S. BENJAMIN, R.F.D.3, Portland, Mich.

Famous O. I. C.'s —Choice gilts and bred sows, and a fine bunch of Sept. pigs. Pairs not akin. S. Royer, Rushsylvania, Ohio.

Berkshire Bargains

I have three tried Registered Berkshire Sows—young and good, will farrow in March to my Masterpiece boar, that I have put into the Bargain Pen to make room for me and money for you.

W. F. McSPARRAN, FURNISS, PA.

LARGE BERKSHIRES—25 sows and gilts bred for Feb. Mar. and April farrow; young service boars, 40 fall pigs, both sex, no kin. H. P. BAUGHMAN, Wadsworth, Ohio.

BERKSHIRES—Fall pigs and service boars. Stock and prices right. White Holland Turkeys $3.50, raised on farm range. W. A. Lothers, Peru Lack, Pa.

REGISTERED Berkshire Boar For Sale—Clearview Lad 163352, farrowed Mar 7, 1911. Sacrificed at $20 to avoid inbreeding. J. W. Dodge, Terra Alta, W. Va.

FOR SALE—Thorobred Berkshire Boar. Rivals Majestic Lee. Farrowed April 9, 1912. Inquire W. J. Gibson, Mgr. Treadway Farms, Willoughby, O.

Large Berkshire Swine. Registered High grade. Prices reasonable. Write HOME FARM, CENTER VALLEY, PA.

Registered Poland Chinas of approved breeding. A grand lot of early spring and fall boars. Twenty-five high classed sows of 1911 farrow will all be safe for early litters. This offering consists of prize winning ancestry. Write me for prices C. S. EPPLEY, ZANESVILLE, OHIO.

Large Type Poland Chinas—Service boars, sows bred to champion boars for March and April farrow. Fall pigs, either sex. Prices reasonable. L. C. McLaughlin, Pleasantville, Ohio.

Poland Chinas and Delaines. Well bred pigs and rams for sale. C. OWEN CARMAN Box C Trumansburg, N. Y.

POLAND CHINA—Big type service boars, yearling sows, gilts bred for spring farrow also fall pigs. Prolific growthy smooth strain. F. A. Kinsey, Lakeville, O.

Fine Lot of Chester Whites, All Ages FOR SALE. HARDIN BROS., Box 196, LIMA, OHIO.

Chester Whites—Choice registered stock of both sexes of serviceable age for sale. Write your wants J. A. Bonk, Rt 4, New Castle, Pa.

MULEFOOT HOGS

Oldest breeder in the State Pedigreed stock for sale. SAMUEL JOHNS, Wilmington, Ohio. Sec. D.

Mule Foot Hogs at Auction. Sale Feb. 15, 1913. 50 bred gilts. Young stock for sale Write for catalog. J. A. Williams, Rt. 6, BxB, Eaton, Ohio.

DUROC JERSEYS Two show boars of spring farrow by Red Col. the 900 lb prize winner. Yearling and gilts bred, price $30 and up. All cholera immune V. E. MICHAEL, Veterinarian, Yellow Springs, O.

Duroc Jerseys —Champion herd at W. Va. Pa., N. J. State fairs, 1912 Booking orders for spring pigs R. B. Martin, Stony Mill, W. Va.

DUROCS and Poland Chinas—35 bred sows for Mar., Apr. & May. Same breed wanted 10 service boars. pedigreed fall pigs O. P. McDowell, Plain City Ohio

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DOGS Broken Fox Hounds, Beagles and Rabbit Hounds, Coon Hound Pups, Collie Dog 2 years old, Collie Pups, Fox Terriers, Bull Terriers, Spaniels, St. Bernard Brood Bitch, St. Bernard Dog, Great Danes. In writing say just what you want. HARRY PEEDER, THORNDALE, PA.

Beagle Dogs and Pups of Pedigreed stock for sale. Honest treatment assured. CHAS. T. DOWNING, Rt 2, West Chester, Pa.

MISCELLANEOUS

Adirondack Farms, Glen Falls, N. Y.

A new importation of forty head of Percheron and Belgian stallions and mares, unequalled in quality and breeding. Better horses, more power, more profit on your farm. Catalogue J, the finest ever, if interested

JACKS and MULES

Raise mules and get rich. 18 Jack and Mule farms under one management, where can be seen 420 head fine large Jacks, Jennys and mules, 14 to 17 hands high. Good ones. Stock guaranteed. Write for prices today. Address KREKLER'S JACK FARM West Elkton, Ohio. Branch barns: Clinton, Ind.

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Also horses and mules. A fine lot of Jacks with plenty of bone. Black mealy noses. Write for prices WM. ARMSTRONG, WOOSTER, OHIO.

"BREED UP YOUR SHEEP" Article sent free to any address. PARSONS, "The Sheep Man of the East." GRAND LEDGE, Rt. 2, MICH.

Collie Pups, Barred Rocks, Toulouse Geese. Indian Runner Ducks, Bantams, of finest breeding. Write. Nelson's Poultry Farm, Grove City, Pa.

Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., Feb. 10, 1913.

Light receipts of butter and the probability of a continued scarcity during the next few days caused an advance of 1c. The demand for good grades of eggs was strong, and prices continued firm. Fine stock of dressed poultry was in demand and scarce, and prices advanced a shade on some grades. Fruits and vegetables continued steady.

Butter.—Western creamery, 38c; extras, 40c; firsts to seconds, 30@37c; special prints, 44@47c; near-by prints, 41c.

Cheese.—New York full cream, 18@18¼c; skims, 11@15c, according to quality.

Eggs.—Candled, 30@32c doz.; extras, 28c. Current receipts at $7.05@7.35 per standard case.

Poultry.—Fowls, 16@17c; old roosters, 12@12½c; spring chickens, 17@18c; ducks, 16@17c; pigeons, 18@25c pair; turkeys, 19@20c.

Dressed Poultry.—Western fowls, 15@17½c; roosters, 13½c; chickens, 18@20c; turkeys, 20@23c.

Vegetables.—White potatoes, choice, 70@72c bu. Onions, 25@40c bu. Cabbage, $4.00@7.00 ton. Lettuce, $1.25@1.75 basket. Cucumbers, $2.75@3.50 basket. Celery, 25@50c bch. Spinach, 75c@$1.00 bbl. Kale, 25@35c bbl. Egg plant, $2.25@2.75 box. String beans, $2.00@3.50 bu. Peas, $2.00@4.00 basket. Peppers, $1.75@2.00 carrier. Tomatoes, $2.00@3.25 carrier.

Fruit.—Apples, choice varieties, 25@75c hamper, $2.00@3.50 bbl. Cranberries, $5.00@8.50 bbl.; $1.75@2.50 crate.

Hay and Grain.—No. 1 timothy, new, $18.50@19.00; No. 2, $16.00@16.50; No. 3 do., 14.00@15.00. No grade, $10.00@12.00. Clover mixed, No. 1, $14.50@15.00; No. 2 do., $12.50@13.50. No. 1 tangled rye straw, $13.50@14.00; No. 1 wheat straw, $10.50@11.00. New shelled corn, as to quality, 53@57c; new cob, 58c per 70 lbs. No. 2 red wheat, $1.00@1.01; No. 3 do., 93@99c. No. 2 white oats, 40½@41c. Standard white, 39½@40c; No. 3 white, 38½@39c.

Hides and Skins.—Steers, abattoir, 17@17½c; do. country, 14@14½c. Cows, abattoir, 15@15½c; do. country, 13c. Bulls, abattoir, 13c; do. country, 11c. Calf skins, Nos. 5 to 12 and up, $1.35@2.45; do. green, 13@14c lb.

Seeds.—Timothy, $3.15@3.25 bu.; clover, white, $25; do. crimson, $6.25; do. mammoth, $14.50; do. sweet, $13.00; do. alsike, $13.25; red top, per bu., $13.50; alfalfa, $7.00@10.00; Canada field peas, $2.35; vetch, $8.50; rye, winter, $1.35; spring, $2.25; soy beans, $3.25; barley, $2.50; buckwheat, $1.50; cowpeas, $3.00@3.25; millet, $1.90@2.75; oats, $1.20; wheat, $1.70@2.00.

Coffee.—Rio, 7s, 13¼@13¾c; Santos, 4s, 15¼c. Mild Coffee—Cordova, 15¾@18c.

Provisions.—City beef, smoked and air-dried, 22@23c. Beef hams, 31@33c. Pork, family, $21.00@22.00; Hams, cured, 13¾@14¼c; skinned, 13@14¼c; smoked, 15½@17c. Other hams, smoked, city cured as to brand, 16@18c. Picnic hams, 11¼@11½c; do. smoked, 13@13½c. Bellies in pickle, 13½@14c. Breakfast bacon, as to quality, 16@20c. Lard, refined, 11¼@11½c; do. in tubs, 11½@11¾c; do. kettle rendered, 11@11½c. Tallow, prime city, 6¾@7c; do. country, 7c; do. dark, 5¾c; do. cakes, 7¼c.

Sugar.—Cut loaf, $5.15 cwt.; cubes, $4.60; powdered, $4.45; granulated, $4.35; standard granulated, $4.40; crystal A, $4.35.

Flour.—Per 196 lbs., in wood, winter clear, new, $4.10@4.30; do. straight, new, $4.50@4.75; favorite brands, $5.00@5.35. Rye flour, Penna., $3.60@3.75.

NEW YORK PRODUCE

New York City, Feb. 10, 1913.

The best grades of butter are in sufficient demand to bring good prices. Other grades are harder to sell at satisfactory figures, there being an ample supply of such stock. Increased egg shipments have made that market barely steady. Even the best grades are ample to meet the present demands. Supplies of fresh-killed poultry are very light. The demand, however, is not very urgent and prices remain at about last week's figures. Fruits and vegetables have good trading. Onions are in excessive demand and bring very unsatisfactory prices. Apples are also ample to meet the demand.

Butter.—Creamery, firsts to extras, 34@38c; thirds to seconds, 29@33½c; factory, 18@23½c; state dairy, 24@35c; packing stock, 17@21½c; process, 19@26½c.

Cheese.—Whole milk special, 18c; do., common to fancy, 16@17¾c; skims, 8@14¾c.

Eggs.—State and near-by, 25@32c; fresh gathered, 21@28c; mixed, 24½@27c; refrigerator, 12@21c.

Dressed Poultry.—Turkeys, dry, 19@24c; chickens, Penna., 15@25c; fowls, 14@17c; old roosters, 13½c; ducks, 16@19c; roasters, 19@20c.

Live Poultry.—Fowls, 12½@14c; chickens, 12½@13c; roosters, 10c; ducks, 14@15c; geese, 14c.

Grain.—Easy. Wheat, No. 2 red, $1.08¼; No. 1 Northern, $1.01½. Corn, 58½c. Oats, standard white, 39c.

Vegetables.—Potatoes, state, $1.75@1.85 per 165-lb. bag. Cabbage, $3.00@4.00 ton; do. Danish, $6.00@7.00 ton. Green beans, $1.50@3.50 basket. Carrots, $1.00@1.75 bag. Cucumbers, $1.00@1.50 dozen. Lettuce, 50c@$2.00 basket. Squash, $1.50@2.00 bbl. Celery, $1.50@4.50 case. Horseradish, $3.00@4.50 cwt. Parsnips, 75c@$1.00 bbl. Turnips, 75c@$1.00.

Fruit.—Apples, $1.75@4.00 bbl., according to variety. Pears, 50c@$1.10 basket. Cranberries, $6.00@10.00 bbl.

BALTIMORE PRODUCE

Baltimore, Md., Feb. 10, 1913.

All creamery grades of butter were in good demand and prices remained firm. Inferior stock, however, was not wanted, and brought unsatisfactory figures. Egg receipts were moderate, but as the demand was limited the supply was more than sufficient and prices dropped 1c on most grades. The demand for live poultry was good, and the market continued firm. Fruits and vegetables were active thruout the week at about steady prices.

Butter.—Creamery, fancy, 36@37c; do., choice, 34@35c; prints and blocks, 32@38c. Maryland and Penna. rolls, 20@22c; prints, 20@21c. Process, 25@27c.

Cheese.—Flat, 17½c; Daisy, 18@18½c.

Eggs.—Md. and Penna., firsts, 23c; western, 23c; southern, 21@22c.

Live Poultry.—Hens, 15c; chickens, 19@20c; old roosters, 9@10c. Turkeys, 21@24c. Ducks, 16@17c. Geese, 14@15c. Guinea fowls, 30@50c each.

Dressed Poultry.—Turkeys, 23@24c; chickens, 18@19c; roosters, 10@11c; ducks, 17@20c; geese, 11@17c.

Vegetables.—Potatoes, white, 55@60c bu. Sweets, $2.25@2.75 bbl. Cabbage, $1.50@1.75 crate; Danish, $5.00@7.00. Onions, 40@45c bu. Lettuce, 20@35c basket. Egg plant, $2.00@2.50 crate. Peppers, $1.50@2.00 crate. Squash, $1.50@2.00 basket. Spinach, 30@40c box. Cucumbers, $3.00@3.50 basket. Beans, green, $2.00@2.50 basket. Celery, $2.50@4.00 crate. Turnips, 15@20c box. Cauliflower, $2.50@2.75 bbl. Horseradish, $1.50@1.65 box. Beets, 40@50c bu.

Fruit.—Apples, new, $2.00@3.50 bbl.; 50c@$1.00 bu. Cranberries, $8.00@9.00 bbl.

Grain.—Wheat.—No. 2 red western, $1.07⅝; contract, $1.06¾. Corn, new, 54½c; contract, 54¼c. Oats, No. 2 white, 39c; standard white, 38c; No. 3 white, 37c. Rye, 55@65c.

Hay and Straw.—No. 1 timothy, $18.50@19.00. No. 2 timothy, $17.00@17.50; No. 3 do., $14.00@16.00. Choice mixed, $15.00@15.50. No. 1 clover, $13.00@13.50. No. 2 do., $11.00@12.50. No. 1 tangled rye straw, $12.50@13.00. No. 1 oat straw, $9.00@10.00. No. 1 wheat straw, $8.00@9.00.

Millfeed.—Spring bran, 23.50@24.00. Middlings, flour to white, $26.00@28.00; western middlings, $24.00@24.50; city mills mids., $24.50@25.00.

WASHINGTON PRODUCE

Washington, D. C., Feb. 10, 1913.

All classes of produce were in active demand and trading was normal. The receipts in most of the markets were ample to meet these demands, however, and prices remained at about last week's figures. Some classes of vegetables declined a shade, owing to the fact that receipts were not of strictly high-grade stock.

Eggs.—Near-by, fresh, per dozen, 23c; southern, per dozen, 23c.

Cheese.—New York, new, per pound, 19c; flat, 19c.

Butter.—Best prints, per pound, 37@38c; tub, 37c; process, 27@28c; undergrades, 25c.

Live Poultry.—Hens, per lb., 16c; roosters, 10c; springers, 18@20c; turkeys, 20@22c; geese, live, 12@15c; ducks, 16@18c.

Vegetables.—Potatoes, bbl., $1.25@1.50; 50@80c bu. Onions, 90c@$1.00 per 100-lb. bag. Lettuce, per bas., 75c@$1.50. Beans, $1.50@2.50 basket. Peppers, per crate, $1.00@1.50. Egg plants, per box, $1.50@3.00. Squash, per bbl., $1.25@1.75. Beets, 50c@$1.00 per 100 bchs. Mushrooms, per lb., 25@40c. Carrots, 1½@2½c bch. Cabbage, $1.00@2.50 bbl. Radishes, 50c@$1.00 per 100. Cauliflower, $1.25@1.75 crate. Apples, $1.50@4.50 bbl.

BUFFALO PRODUCE

Buffalo, N. Y., Feb. 10, 1913.

Butter.—Active and firm. Creamery choice, 37c; choice dairy, 31@32c.

Cheese.—Quiet and steady. Fancy, 18c; good, 16½@17½c.

Eggs.—Steady. State candled, 30@31c; storage, 22@24c.

Dressed Poultry.—Active. Turkeys, per lb., 23@25c; fowls, fancy, 14@17c; chickens, 15@18c; old roosters, 12@13c; ducks, 20@22c; geese, 17@18c.

Live Poultry.—Active. Chickens, 15½@18c; ducks, 18@19c; geese, 15@17c; turkeys, 20@23c.

Vegetables.—Potatoes firm. Home-grown 63@65c bu. Cabbage, $1.50@2.50 per 100. Onions, 65@80c bu. Beans, green, $2.00@3.50 hamp. Turnips, 90c@$1.00 bbl. Celery, 40@50c doz. Lettuce, 40@70c.

Beans.—Quiet, steady. Marrow, fancy, $3.30@3.40; medium, $2.50@2.60; red kidneys, $2.75@3.00.

Fruits.—Apples, $2.25@3.25 bbl.; 50@75c bu.

Honey.—Firm. No. 1 fancy, 17c; No. 2 new, 14@15c; dark, 12c.

Hay.—Weak. Timothy, choice, on track, $17.50; No. 1 do., $16.50; No. 2, $15.50; light mixed, No. 1, $13.50; rye straw, $10.00@11.00; oat and wheat straw, $9.00@13.00.

Feed.—Steady. Spring bran, $22.00 ton. Standard mids., $22.25. Corn meal, $25.00. Gluten, $28.50. Hominy, $24.50. Oilmeal, $30.00.

YORK PRODUCE MARKET

York, Pa., Feb. 10, 1913.

Markets were well attended during the week by the farmers and buyers. Prices were without material change, except the advance in eggs, due probably to the cold weather.

Butter.—Country, 28@32c; separator, 32@35c. Milk, 6c per qt.

Eggs.—24@25c doz.

Poultry.—Hens, 12@13c. Dressed poultry, 40@75c.

Vegetables.—Potatoes, 10c half peck; 55@60c bu.; cabbage, 2@4c each; lettuce, 5@10c; beets, 3@5c bunch, 10c per ½ pk.; radishes, 2@5c; turnips, 10c per ½ pk.; lima beans, 12c qt.; soup beans, 10c qt.; celery, 3@7c stalk; sweet potatoes, 10c per ½ peck; spinach, 10c per ½ peck; parsnips, 10c per ½ pk.; sauer kraut, 5@7c qt.; lard, 12@14c lb.; corn meal, 5@6c qt.

Fruit.—Apples, 10@25c a half peck; grapes, 10@15c ½ pk.; pears, 10@15c per ½ pk.; chestnuts, 15c qt.; walnuts, 15c per ½ peck; strawberries, 25c qt.

Retail Grain Market.—Wheat, $1.13; corn, 68c; oats, 50c; bran, $1.35 a cwt.; rye, 78c; middlings, $1.55 a cwt.

Wholesale Grain Market.—Wheat, $1.03; corn, 57c; oats, 40c; rye, 68c.

WILMINGTON PRODUCE

Wilmington, Del., Feb. 10, 1913.

Market quotations are mainly steady with those of last week. Trading is fair and the supply about normal.

Fruits.—Apples, 50@75c basket; $2.75@3.50 bbl. Grapes, $4.00@6.50 keg.

Vegetables.—Potatoes, 80c bu.; $2.00 bbl. Cabbage, 75c@$1.00 bbl.; 25c basket. Onions, 40c basket. Celery, 25@50c doz. Spinach, $1.25 bbl. Sweet potatoes, 75c basket; $3.00@3.75 bbl. Kale, $1.00 bbl. Carrots, 10c ½ pk. Lettuce, $1.50 basket.

Poultry.—Chickens, live, 15@16c; do., dressed, 17@19c. Ducks, 14c lb.; dressed, 18c.

Eggs.—28@30c; storage, 22@25c.

Butter.—Creamery, 30@33c; prints, 38@45c.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., Feb. 10, 1913.

The cattle market was more or less dull on the incoming of the Lenten season. Prices, however, remained fairly steady.

	Beef Cattle	Sheep and Lambs	Hogs
Total for week	4,521	11,145	5,024
Previous week	4,724	10,560	5,185

Best steers	$8.25@8.40
Choice steers	8.00@8.10
Good	7.75@7.87½
Medium steers	6.75@7.25
Common steers	6.25@6.75
Bulls	4.25@6.50
Fat cows	5.00@6.00
Thin cows	2.75@3.25
Milk cows	40.00@65.00

Veal calves are steady.

Best calves	$11.00@11.50
Good to choice do.	10.00@10.50
Medium	7.00@8.00
Common do.	6.50@6.75
Thin do.	5.00@8.00

Sheep and lambs were steady at unchanged figures.

Extra wethers	$6.25@6.50
Choice wethers	$5.75@6.00
Good wethers	5.25@5.50
Common to medium	3.00@5.00
Ewes, fat	5.00@5.50
Extra lambs	9.25@9.50
Good to choice do.	9.00@9.25
Common to medium	5.75@8.25

Hogs are a shade stronger, westerns selling at $11.50.

City Dressed Stock.—Choice classes of dressed meat are steady. Trade is normal. Steers, 10@13c; heifers, 9@12c; cows, 7½@10½c. Veal calves, 14@16c; country dressed calves, 13@14c; extra do., 17c. Sheep, 9@10c; extra wethers, 11c. Spring lambs, 14@15c. Hogs, 11¾c.

BUFALO LIVE STOCK

Buffalo, N. Y., Feb. 10, 1913.

Cattle receipts today were 100 loads. The market ruled 10 to 20 cents higher than the close of last week, but lower than a week ago.

Choice heavy steers	$8.25@8.50
Medium	7.25@8.00
Yearlings	7.25@8.25
Plain heavy	6.50@7.15
Handy butchers	6.35@7.00
Good to choice fat cows	4.00@6.75
Good to choice heifers	5.00@7.50
Butcher bulls	4.65@6.75
Feeders	5.50@6.50
Stockers	4.25@5.40
Cows and springers	65.00@85.00

Calf receipts today were 700 head. The market was dull and lower.

Choice veals	$11.00@12.00
Light and thin	4.00@6.50

There were 65 cars of sheep and lambs on sale today. Cooler weather has helped the market, and trade was very satisfactory. Prices ranged about 25 cents higher.

Choice lambs	$9.25@9.50
Poorer grades	6.00@6.50
Yearlings	8.25@8.75
Wethers	6.50@7.50
Ewes	5.50@6.00
Sheep	6.00@6.25

Today's hog receipts were 65 carloads. Prices were good all last week, and there was another advance today.

Heavies	$8.65@8.70
Mixed and medium	8.65@8.70
Yorkers	8.70@8.75
Light Yorkers	8.75@8.85
Pigs	8.75@8.85
Stags	6.00@7.00
Roughs	7.40@7.60

PITTSBURGH LIVE STOCK

Pittsburgh, Pa., Feb. 10, 1913.

Today's cattle receipts were 85 loads. The market was fairly active at prices steady with last week. Heifers and fat cows are mainly steady, while bulls of all grades and bologna cows are higher. Best fresh cows are only steady, while springers and medium grades are easier.

Good to choice	$8.30@8.65
Good 1300 to 1400 lb.	8.10@8.30
Medium to good, 1200-1300 lb.	7.60@8.00
Tidy, 1050-1150 lb.	7.65@8.00
Fair to medium 900-1100 lb.	6.25@7.00
Common to good fat oxen	4.00@6.00
Common, 700-900 lb.	5.00@6.00
Common to good fat bulls	4.00@6.50
Common to good fat cows	3.75@6.50
Heifers, 700 to 900 lbs.	4.25@7.50
Bologna cows	3.75@4.00
Fresh cows and springers	25.00@80.00

Calves.—Receipts were 400 head. The market ruled steady on best grades. Other grades were 25 cents lower.

Heavy and thin calves	$6.00@6.25
Veal calves	7.50@11.00

Hog's.—Today's hog receipts were 40 double-deck loads. The market was active and higher than at the close of last week.

Prime heavy	$8.40@
Prime medium weights	8.75@
Heavy mixed	8.60@
Best heavy Yorkers	8.75@
Light Yorkers	8.80@
Pigs as to quality	8.80@
Common to good roughs	8.70@8.80
Stags	6.00@6.35

The supply of sheep and lambs today was 15 double-deck loads. There was a fair demand and the market ruled active and stronger on choice lambs. Other grades of lambs and sheep sold steady with last week.

Prime wethers	$5.80@6.10
Fair mixed ewes and wethers	4.75@5.25
Culls and commons	2.50@3.50
Spring lambs	5.50@9.25
Good mixed	5.60@5.85

BALTIMORE LIVE STOCK

Baltimore, Md., Feb. 10, 1913.

Beef receipts for the week were 1,905 head. The beef supply was equal to meet the normal demand. Trading was good and prices remained firm.

Steers	$4.75@8.25
Heifers	4.25@6.75
Cows	2.00@5.40
Bulls	3.25@5.25
Fresh cows	$27.50@77.50

Sheep and lamb receipts were 2,109 head. Under a light supply the market is higher.

Sheep	$3.50@6.00
Lambs	6.00@9.50

There were 13,462 hogs on sale during the week. Under greater demand for all classes of stock, the market has advanced and is firm.

Light western	$8.80@9.05
Heavy to medium	8.00@8.25
Near-by	8.75@8.85
Pigs	8.50@8.75
Roughs	6.50@8.75

Calf receipts for the week were 289 head. Most of the receipts were of unattractive stock, and under a good demand calves advanced a shade and sold at $5.50@11.00.

NEW YORK LIVE STOCK

New York City, Feb. 10, 1913.

Calf receipts were 3,665 head. The market is firm.

Steers	$5.00@8.60
Bulls	5.00@6.60
Cows	3.25@6.35

Calf receipts were 1,911 head. The market is steady to firm.

Choice veals	$12.00@12.50
Good veals	8.50@11.50
Culls	6.00@8.50
Barnyard calves	4.00@5.50
Fed calves	6.00@8.00
Westerns	3.50@5.00

Dressed calves are steady.

City-dressed veals	15@19c
Country-dressed veals	10@15½c

Sheep and lamb receipts were 11,951 head. The market is irregular.

Sheep	$4.50@5.75
Culls	3.25@4.25
Lambs	8.00@9.60
Culls	6.50@7.50
Yearlings	6.00@8.50

Hog receipts were 8,852 head. The market is firm.

Light to heavy	$8.75@
Roughs	7.50@7.75

ELGIN BUTTER QUOTATION

Elgin, Ill., Feb. 10, 1913.

The quotation committee of the Elgin Board of Trade this afternoon declared butter firm at 34½@35½c a pound.

NEW YORK MILK QUOTATION

The wholesale milk price is $1.81 per 40-quart can for class C; class B, $1.91.

PITTSBURGH HAY AND GRAIN

Pittsburgh, Pa., Feb. 10, 1913.

The demand for No. 1 timothy and No. 1 mixed continues strong, and prices on these grades are firm. The poorer grades, however, are not wanted at satisfactory prices. The straw receipts continue heavy, while the demand is only fair. Market steady. No. 1 timothy, $16.00@16.50; No. 2 do., $14.00@15.00; No. 3 do., $11.00@13.00; No. 1 light mixed, $14.50@15.00; No. 1 clover mixed, $14.50@15.00; No. 2 do., $12.00@13.00. No. 1 clover, $13.50@14.00; No. 2 do., $10.00@12.00. No. 3 prairie, $11.00@11.50; No. 4 do., $9.00@10.00. No. 1 oat straw, $9.25@9.50; No. 2 do., $8.75@9.00; No. 1 wheat, $9.50@10.00; No. 2 do., $9.00@9.50; No. 1 rye, $10.50@11.00, No. 2 do., $9.25@9.50. Ear corn arrivals are in good demand. Market strong. No. 2 yellow, 57@58c. No. 2 high mixed, 56@56½c. Shelled corn receipts are in greater demand. Market is stronger. No. 3 yellow shelled, 54½@55c; sample, 52½@54c. Oats are in greater demand. Market firm. No. 2 white, 37½@38c; standard, 36½@37c; No. 3 do., 35½@36c; No. 4 do., 33@34½c. The demand for middlings is very slow, but bran has improved. Market dull. No. 2 white mids., $25.00@25.50; No. 1 brown mids., $22.50@23.00. Winter wheat bran, coarse, $23.00@23.50; do. medium, $22.50@23.00.

TOBACCO MARKET

The much-abused practice of docking is now a prominent and very unfortunate feature at many of the large tobacco markets. Evidently unscrupulous packers have operated thru irresponsible buyers, the two combining to beat the farmer down in price at the time of delivery. Farmers have found that their tobacco was not sold but simply pledged to the option of flickering buyers or merely employes of warehousemen, who dare not make their own contracts on account of their responsibility in law. Growers are learning that it is best to ignore these so-called buyers, and accordingly in one community a contract has been signed, pledging a forfeit of $100 for selling before tobacco is bundled and thus ready for delivery.

The brief of the Lancaster County Tobacco Growers' Association at the Congressional tariff hearing contains much interesting information. Of course, a vigorous protest is made against the lowering of duty on foreign tobacco, and it is cited that this would be disastrous not alone to Pennsylvania but to growers in various other states. The brief states that Lancaster County grows annually 18,000 acres of tobacco, worth approximately $2,000,000; that the barns used in curing are worth $3,000,000, and the cost of labor is $1,500,000 per year. In the last 10 years it is stated, the county has paid an internal revenue of $25,000,000.

The local market is slightly lower, some very good crops selling recently at $9 and $3 per cwt. Stripping has been progressing rapidly, but is now hindered by the advent of cold weather. At a large warehouse at Manheim, 10 wagons were being unloaded at the same time, and 53 loads were in waiting. That day about 300,000 pounds were delivered. With the exception of hail cut, the new crop is practically without damage.

In the annual tobacco show, held at Lancaster February 3, there were 20 wrapper, 39 binder and 28 filler entries. The prize winners were J. H. Hostetter, of Millersville, who won first on both wrapper and binder, and Hon. George Hibshman, who won in the filler class. The exhibit was double that of last year, and the quality was better. The judges stated, however, that there was no typical filler shown. The attendance was good, consisting of dealers as well as farmers.—H. E. Tweed, February 10, 1913.

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STATE BEE KEEPERS' MEETING

The Pennsylvania State Bee Keepers' Association will hold its annual convention in the State Capitol, Harrisburg, February 25 and 26. This is the ninth annual meeting, and promises to be the best in the history of the Association. The organization has a membership of several hundred live bee keepers, and its conventions are always marked by great interest and lively discussion. The Association has for its object mutual co-operation of those in the craft, help and information to every farmer keeping a colony of bees, and the building up of an industry in the state which would be the means of saving a value of thousands of dollars to the production of the state every year.

It will pay everyone, even if he owns only a single colony of bees, to attend the meetings, for the instructions will enable him to increase the production of honey that much more. Dr. H. A. Surface, of Harrisburg, the president, and Prof. H. C. Klinger, of Liverpool, Pa., are using every means for a good program. The questions of eradicating foul brood, spring management, working outyards, re-queening and other subjects of interest will be discussed. Some of the most experienced bee keepers of the state and others from out of the state will handle these questions. The evening sessions will be devoted to illustrated lectures. The first session will begin 7 P. M. Tuesday, February, 25.

VALUABLE FARMERS' HANDBOOK FREE

A valuable handbook on farm uses and management of Red Cross Dynamite is offered free by the DuPont Powder Company. It tells how to use dynamite for blasting stones and stumps, for draining and tree planting and the many other uses that are becoming so common in farm practice. The book is sent absolutely free upon postal-card request, telling location and size of your farm and about how many acres you have in need of stumping, drainage, ditching, breaking up hardpan or tree planting. Address DuPont Powder Co., Wilmington, Del., and ask for Handbook No. 407.

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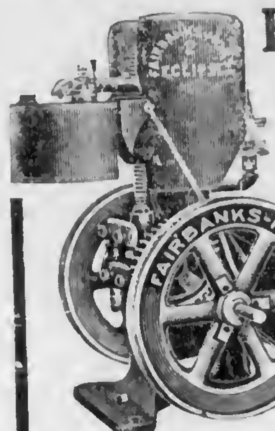

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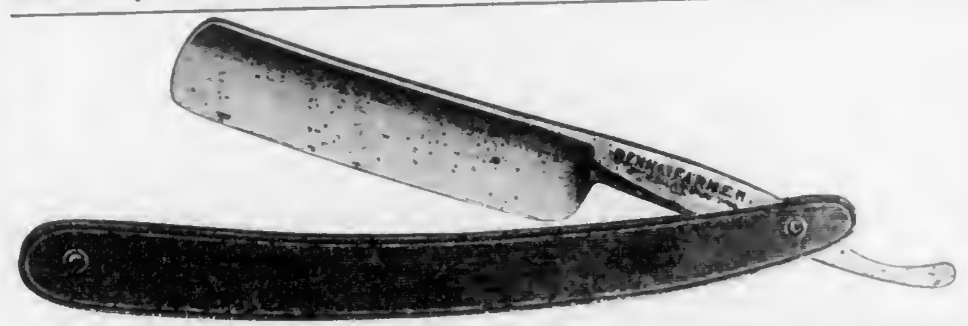

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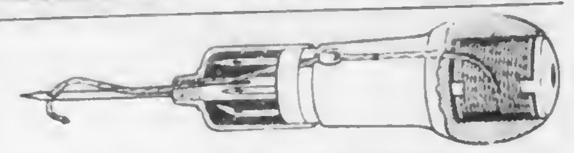

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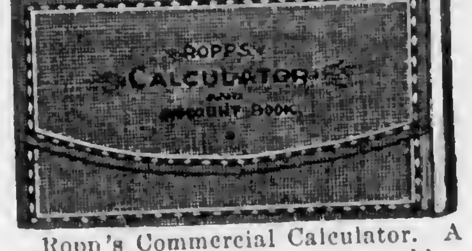

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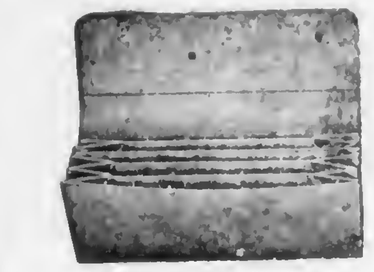

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SECRET SERVICE

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BOOK II

WHAT HAPPENED AT NINE O'CLOCK

CHAPTER XIII (Concluded)

Edith could hear the approaching soldiers as well as anybody. The way was barred, she realized instantly. Well, if she could not escape, at least she could get out of sight. She turned and opened the nearest window and stepped out. Arrelsford knew that she could not go far, and that he could produce her whenever he wanted her. He made no objection to her departure that way, therefore. Instead he looked at Thorne.

"I have got you just where I want you at last," he said mockingly, as the trampling feet came nearer. "You thought you were mighty smart, but you will find out that I can match your trick every time."

Outside in the hall the men came to a sudden halt before the door. One of them knocked loudly upon it.

"What's the matter here?" cried the Sergeant of the Guard without.

The handle was tried and the door was shoved violently, but the brass bolt held.

"Let us in!" he cried angrily.

Quick as a flash of lightning an idea came to Thorne.

"Sergeant!" he shouted in a powerful voice. "Sergeant of the Guard!"

"Sir!"

"Break down the door! Break it down with your musket butts!"

As the butts of the muskets pounded against the heavy mahogany panels, Arrelsford cried out in great surprise:

"What did you say?"

In his astonishment, he did not notice a swift movement Thorne made toward the door.

"You want them in, don't you?" the soldier said, as he approached the door. "It is locked and——"

But Arrelsford recovered himself a little and again presented his revolver.

"Stand where you are," he cried, but Thorne by this time had reached the door.

"Smash it down, Sergeant!" he cried. "What are you waiting for? Batter it down!"

The next moment the door gave way with a crash, and into the room poured the guard. The grizzled old Sergeant had scarcely stepped inside the room when Thorne shouted in tones of the fiercest authority, pointing at Arrelsford:

"Arrest that man!"

Before the dazed Secret Service Agent could say a word or press the trigger the soldiers were upon him.

"He got in here with a revolver," continued Thorne more quietly, "and is playing hell with it. Hold him fast!"

CHAPTER XIV

The Call of the Key

This astonishing denouncement fairly paralyzed Arrelsford. With a daring and ability for which he had not given Thorne credit, and which was totally unexpected, altho what he had learned of his previous career might have given him some warning, the tables had been turned upon him by a man whom he confidently fancied he had entrapped beyond possibility of escape!

His amazement held him speechless for a moment, but his natural resourcefulness came back to him with his returning presence of mind. He knew the futility of an attempt to struggle with his captors, he therefore decided to try to reason with them.

"Sergeant," he began, quietly enough, "my orders are——"

But Thorne would not let him continue. Having gained the advantage, he was determined to keep it to the end, and for that purpose he followed up his first blow, ruthlessly pressing his charge hard.

"Damn your orders!" he interrupted furiously. "You haven't got orders to shoot up everybody you see in this office, have you?"

This was too much for Arrelsford, and he made a desperate plunge forward to get at Thorne, who shook his wounded wrist in the Secret Service Agent's face. The soldiers held him tightly, however, and Thorne continued hotly:

"Get his gun away, Sergeant; he'll hurt somebody."

While the soldiers—who appeared to entertain no doubt and to have no hesitancy whatever about obeying Thorne's orders, the latter evidently the military man of the two and his voice and bearing, to say nothing of his uniform, telling heavily against a civilian like Arrelsford—were taking the revolver out of his hands, Thorne once more turned to the telegraph table. His blood was up and he would send the despatch now before the whole assemblage, before the Confederate Government or its Army, if necessary.

Arrelsford burst out in a last vain attempt to stop him.

"Listen to me, Sergeant," he pleaded desperately "he is going to send out a false telegram and——"

"That'll do," gruffly said the Sergeant of the Guard, shaking his fist in Arrelsford's face, "what is it all about, Captain?"

"All about? I haven't the slightest idea. He says he comes from some office or other. I was sending off some important official despatches here and he began by letting off his gun at me. Crazy lunatic, I think."

"It's a lie!" said Arrelsford furiously. "Let me speak—I will—prove——"

"Here!" said the Sergeant of the Guard, "that'll do now. What shall I do with him, Captain?"

"I don't care a damn what you do with him. Get him out of here, that's all I want."

"Very well, sir. Are you much hurt?"

"Oh, no. He did up one hand, but I can get along with the other all right," said Thorne, sitting down at the table and seizing the key.

"Stop him!" cried Arrelsford, fully divining that Thorne intended to send the message. "He's sending a — wait!" A thought came to him. "Ask Miss Varney, she saw him—ask Miss Varney."

But the old Sergeant of the Guard paid no attention whatever to his frantic appeals.

"Here, fall in there!" he said. "We'll get him out, Captain. Have you got him, men? Forward then!"

Struggling furiously the squad of soldiers forced Arrelsford to the door. Thorne paid absolutely no attention to them; he had forgotten their presence. Like his attention, his mind and heart were on the key again. But he was fated to meet with still another interruption.

"Halt there!" cried a sharp voice from the hall, just as the group reached the door.

"Halt! Left face!" cried the Sergeant in turn, recognizing that here was a superior whom it were well to obey without question or hesitation.

"Here is General Randolph," said the voice outside, giving the name of one of the high officers of the Richmond Garrison.

"Present arms!" cried the Sergeant of the Guard as General Randolph appeared in the doorway.

Following him were some officers of his staff and by his side was the imposing figure of Miss Caroline Mitford. The humiliation and indignation had vanished from her bearing, which was one of unmitigated triumph. She threw a glance at Arrelsford which bode ill for that young man. The General entered the room and stopped before the Secret Service Agent, who stood in front of the guard, altho he had been released by the men.

"What's all this about?" he asked peremptorily.

Altho he knew that something important was transpiring, and that the newcomer was a man of rank, Thorne never turned his head. At whatever cost, he realized he must get the telegram off, and from the look of things it appeared that his only chance was then and there. He did not care if the President of the Confederate States of America was there in person, his mind and soul were on the order. He was frantically calling the station he wanted, the one indicated by "Plan 3," and he had the doctored despatch, to which he had pasted the Secretary's signature spread out on the table before him.

"What's all this about refusing to send out Miss Mitford's telegram?" began General Randolph peremptorily. "Some of your work, I understand, Mr. Arrelsford."

"General!" cried Arrelsford, breathlessly. "They have arrested me. It is a conspiracy——" He turned toward Thorne. "Stop that man, for God's sake stop him before it's too late!"

At this juncture, Caroline Mitford turned from the room and joined old Martha in the hall and disappeared. She had only come back with the General to punish Arrelsford, but she did not care to have her precious despatch made the subject of discussion before so many people.

"Stop him!" exclaimed the General. "What do you mean?"

It was evident that the despatch was not to go out then. Thorne had not succeeded in getting an answer to his signal. He left the key, rose and saluted.

"He means me, sir," he said. "He's got an idea some despatch I'm sending out is a trick of the Yankees."

"It is a conspiracy!" cried Arrelsford. "He is an impostor——"

"Why, the man must have gone crazy, General," said Thorne coolly, holding his position by the table and listening with all his ears for the return signal.

"I came here on a case for——" expostulated Arrelsford.

"Wait!" said General Randolph. "I will soon get at the bottom of this. What was he doing when you came in, Sergeant?" he asked of the non-commissioned officer in charge of the guard.

"He was firing on the Captain, sir," answered the Sergeant saluting.

"He was sending out a false order to weaken our lines at Cemetery Hill, and I—ah—Miss Varney, she was here. She saw it all," explained Arrelsford.

"Miss Varney!" exclaimed the General.

"Yes, sir."

"The General's daughter?"

"Yes, sir."

"And what was she doing here?"

"She came to see for herself whether this man was guilty or not; whether he was a spy or a traitor."

"Is this some personal matter of yours, Mr. Arrelsford?" asked the General suspiciously.

"He was a visitor at her house and I wanted her to know."

"Where is she now? Where is Miss Varney?" asked Randolph impatiently.

"She must be out there on the balcony," answered Arrelsford. "I beg you to send for her, sir."

"Sergeant," said General Randolph, "step out on the balcony. Present my compliments to Miss Varney, and ask her to come in at once."

In a moment the Sergeant returned.

"There is no one there, sir," he replied saluting.

At that instant Thorne got the long desired signal. Without a moment's hesitation he turned to the key. He picked up the despatch with his wounded left hand and with the other began to manipulate the sounder.

"She must be there," said Arrelsford, "or else she's stepped into the next room, the Commissary General's Office, the window was open, tell him to—ah!" as the sound of the clicking caught his ear, "Stop him! He is sending it now!"

Mr. Arrelsford's distress was so overwhelming and so genuine that something of the man's suspicion was communicated to the General.

"One moment, Captain," he said.

Captain Thorne, of course, had no option but to release the key. He stopped sending and dropped the patch, saluting.

"Now, Mr. Arrelsford," said General, "what have you to do with Military Telegraph Department?"

"This is a Secret Service case; assigned it to me, sir."

"What is a Secret Service case?"

"The whole plot to send the o It's the Yankee Secret Service. H a member of it and his brother br in the signal tonight."

"I beg your pardon, sir," Thorne, "this despatch ought to go at once, sir. It came from the S tary of War and it is very urgent."

"Go ahead with it," said Gen Randolph.

Thorne needed no further permis than that, dropped to his seat, and o more seized the fatal key.

"No, no!" cried Arrelsford. "Do let him—I tell you it's a——"

"Silence sir," thundered Randolph

"Do you know what he is tel them?" persisted Arrelsford.

"No, do you?"

"Yes," returned the Secret Serv Agent.

"Wait a moment, Captain Thorne said the General, impressed in spite himself by this man's earnestn which made him disregard all or commands, and everything else. "W is the despatch?"

Captain Thorne picked up the pa and handed it to the General, and th stepped back. He had played his card. He played it desperately, bold and well.

"Well?" asked the General, looki from the despatch to the accu "what has he been telling them?"

"He began to give an order to wi draw Marston's Division from its pr ent position," said Arrelsford, maki a brilliant and successful guess at th probable point of attack in "Plan 3.

"That is perfectly correct," sa General Randolph, looking at the pape

"Yes, by that despatch, but that de patch is a forgery. It is an order t withdraw a whole division from a vit point. A false order, he wrote it hi self. This is the turning point of th whole plot."

"But why should he write it himself If he wanted to send a false order, h could send it without putting it dow on paper, couldn't he?"

"Yes," admitted Arrelsford, but h went on with great acuteness, "if an of the operators came back they woul catch him doing it. With that ord and the Secretary's signature he coul go right on. He could even order on of them to send it."

"And pray how did he get the Se retary's signature to a forged tele gram?" asked General Randolph.

"He tore it off a genuine despatch Why, General, look at that despatch i your hand yourself. The Secretary's signature is pasted on, I saw him d it."

"They often come that way, si said Thorne nonchalantly.

"He is a liar!" cried Arrelsford "They never do!"

Thorne stepped forward impulsively his face flushed at the word "liar," but he controlled himself.

"General," he said, "if you have any doubt about that despatch, send it back to the War Office and have it verified."

It was a splendid, magnificent bluff So overwhelming in its assurance that even Arrelsford himself was petrified with astonishment. He was morally certain that Thorne was a Federal Secret Service Agent and that the despatch was a forgery, yet it would take but a few minutes to send it over to the Secretary's office and convict him out of his own mouth. What could the man mean!

"That's a good idea," said General Randolph. He hesitated a moment and then turned to the guard. "Sergeant," he said, "take this despatch over to the Secretary's office and——"

At that moment the key, which had been silent, began a lively clicking. General Randolph turned toward it, and Thorne made a quick step in the same direction.

"What's that?" asked the General.

Thorne stood by the desk listening while the key clicked out the message.

"Adjutant General Chesney," he spelt out slowly.

"Oh, from the front, then?" said Randolph.

"Yes, sir," answered Thorne.

"What is he saying?"

Thorne stepped to the table and bent over the clicking key. "His compliments, sir," he read off slowly. "He asks"—waiting for a few minutes—"for the rest,"—still another pause—"of that despatch—he says it's of vital importance, sir, and——"

The communication which Thorne had made to General Randolph was in itself or vital importance. The General was too good a soldier not to know the danger of delay in the carrying out of a military manoeuvre which was probably part of some general plan of attack or defence to which he was not privy. He made up his mind instantly. He took the despatch from the hand of the Sergeant and turned it over to Thorne again.

"Let him have it," he said decisively.

The Captain, with his heart pounding like mad, sat down at the table and seized the key. Was he going to complete the despatch? Was the plan to be carried out? Had he triumphed in the bold and desperate game played by his splendid courage, resourcefulness and assurance? His eyes shone, the color came back into his pale cheeks as his hands trembled on the key.

"General!" cried Arrelsford, "if you——"

"That's enough, sir. We will have you examined at headquarters."

At that instant Lieutenant Foray came rapidly into the room.

"Thank God!" cried Arrelsford, as he caught sight of him. "There's a witness, he was sent away on a forged order, ask him?"

Another interruption, thought Thorne, desperately fingering the keys. If they would only give him a minute more he could complete the order, but he was not to have that minute apparently.

"Wait, Captain," said General Randolph quickly, and again the key was silent. "Now, sir," he said to Lieutenant Foray, "where did you come from?"

The Lieutenant did not all comprehend what was toward, but his answer to that question was plain.

"There was some mistake, sir," he answered, saluting.

"Ah!" cried Arrelsford, a note of triumph in his voice.

"Who made it?" asked the General.

"I got an order to go to the President's house," returned Foray, "and when I got there the President——"

Thorne made one last attempt to complete his message.

"Beg pardon, General, this delay will be most disastrous. Permit me to go on with this message. If there's any mistake, we can rectify it afterward."

He seized the key and continued sending the message as he spoke.

General Randolph either did not hear Thorne's speech or heed it, or else he did not care to prevent him, and he continued his questioning.

"Where did you get this mistaken order?" he asked.

But Arrelsford, intensely alive to what was going on, interposed.

"He's at it again, sir!"

"Halt, there!" said General Randolph. "I ordered you to wait."

The despatch was almost completed Thorne ground his teeth with rage in his impatience. He had tried audacity before, he would try it again.

"I was sent here to attend to the business of this office, and that business is going out," he said resolutely.

"No," said General Randolph, with equal firmness, "it is not going out until I am ready for it."

"My orders come from the War Department, not from you, sir. This despatch came in half an hour ago," answered Thorne angrily, his voice rising, "they are calling for it at the other end of the line. It's my business to send it out and I am going to do it."

"Stop!" said General Randolph, as Thorne began to send the message again. "Sergeant, seize that man and keep him from that machine."

Well, the last hope was gone. As the Sergeant stepped forward to execute his orders, Thorne, desperately determined to the last, clicked out a letter, but he was cut short in the middle of a word. The Sergeant and two men dragged him away, chair and all, from the table, and two others posted themselves in front of the key.

"I will have you court-martialled for this, sir," said General Randolph angrily.

"You will have to answer yourself," cried Thorne, playing the game to the last, "for the delay of a despatch of vital importance, sent by the Secretary of War."

"Do you mean that?" cried Randolph.

"I mean just that," answered Thorne, "and I demand that you let me proceed with the business of this office. Before these officers and men I repeat that demand."

"By what authority do you send that despatch?"

"I refer you to the Department, sir."

"Show me your orders for taking charge of this office."

"I refer you to the Department, sir," answered Thorne stubbornly.

"By God, sir!" continued General Randolph hotly. "I will refer to the Department. Leave your men on guard there, Sergeant. Go over to the War Office. My compliments to the Secretary of War, and ask him if he will be so good as to——"

But Arrelsford's evil genius prompted him to interpose again. When affairs were going to his liking he should have let them alone, but he determined to make the most of it and the chance.

"Another witness! Miss Varney," he cried triumphantly, as he bowed toward the window in which Edith had at that moment appeared. "She was here with me, she saw it all. Ask her."

General Randolph turned again toward the window and in his turn bowed to the girl.

"Miss Varney," he asked courteously, "do you know anything about this?"

"About what, sir?" answered Edith in a low voice.

"Mr. Arrelsford claims that Captain Thorne is acting without authority in this office and that you can testify to that effect," was the General's answer.

CHAPTER XV

Love and Duty at the Touch

Thorne's case was now absolutely hopeless. By the testimony of two witnesses a thing is established. All that Arrelsford had seen, Edith had seen. All that he knew, she knew. She had only to speak and the plan had failed; the cleverly constructed scheme would fall to pieces. His brother's life would have been wasted, nay more, his own life also; for well did he realize that the bold way he had played the game would the more certainly hasten his immediate execution. A spy in the Confederate capital!

He could reproach himself with nothing. He had done his very best. An ordinary man would have failed a dozen times in the struggle. Courage, adroitness, resourcefulness, and good fortune had carried him so far, but the odds were now heavily against him, and nothing that he could do would avail him anything. The game was played and he had lost; Arrelsford had triumphed.

Thorne, in the one word that Edith Varney was to speak, would lose life, honor and that for which he had risked both. And he would lose more than that. He would lose the love of the woman who had never seemed so beautiful to him as she stood there, pale-faced, erect, the very incarnation of self-sacrifice, as were all the women of the Confederacy. And he would lose more than her love. He would lose her respect. His humiliation would be her humiliation. Never so long as she lived could her mind dwell on him with tenderness. The sound of his name would be a hissing and a reproach in her ear, his reputation a by-word and a shame. Her connection with him and that he had loved her would humiliate her only less than the fact that she had loved him.

His condition was indeed pitiable; yet to do him justice, his thoughts were not so much for himself as they were for two other things. First and foremost bulked largest before him the plan for which he had made all this sacrifice, which had promised to end the weary months of siege which Richmond and Petersburg had sustained. His brother had lost his life, he more than suspected, in the endeavor to carry it out, and now he had failed. That was a natural humiliation and reproach to his pride, altho as his mind went back over the scene he could detect no false move on his part. Of course, his allowing his love for Edith Varney to get the mastery of him had been wrong under the circumstances, but that had not affected the failure or success of his endeavors.

And his thoughts also were for the woman. He knew that she loved him, she had admitted it, but once his eyes had been opened, he could have told it without any admission at all. All that he had suffered, she had suffered, and more. If she would be compelled to apologize for him, she would also be compelled to assume the defensive for him. She loved him and she was placed in the fearful position of having to deal the blow. The words which would presently fall from her lips would complete his undoing. They would blast his reputation forever and send him to his death. He knew they would not be easy words for her to speak. He knew that whatever his merit or demerit, she would never forget that it was she who had completed his ruin; the fact that she would also ruin the plan against her country would not weigh very heavily in her heart against that present personal consideration—after a while maybe but not at first. And therefore he pitied her.

He drew himself erect to meet his fate like a man, and waited. The wait was a long one. Edith Varney was having her own troubles. She knew as well as anyone the importance of her testimony. She had come from the Commissary General's vacant office and had been at the back window long enough to have heard the conversation between General Randolph and the two men. She was an unusually keen-witted girl and she realized the situation to the full.

Her confidence in her lover had been shaken, undermined, restored, and shaken again, until her mind was in a perfect whirl. She did not know, she could not tell whether he was what he seemed to be or not. It seemed like treachery to him, this uncertainty. It would be a simple matter to corroborate Mr. Arrelsford at once, and it occurred to her that she had no option. But coincident with the question flashed into her mind something she had forgotten which made it possible for her to answer in another way. Thus, she understood that the life of her lover hung upon her decision.

What answer should she make? What course should she take? She realized, too, that it was quite possible if she saved his life, it might result in the carrying out of the plan about which there had been so much discussion and which threatened so much against her country. If he were false and she saved him he would certainly take advantage of the respite. If he were true and she saved him no harm could come to her country. She was intensely patriotic. And that phase of the problem worried her greatly.

Her eyes flashed quickly from the vindictive yet triumphant face of Arrelsford, whom she loathed, to the pale, composed, set face of Thorne, whom she loved, and her glance fell upon his wounded left wrist, tied up, the blood oozing thru the handkerchief. A wave of sympathy and tenderness filled her breast. He was hurt, suffering—that decided her.

With one brief, voiceless prayer to God for guidance, she turned to General Randolph, and it was well that she spoke when she did, for the pause had become insupportable to Thorne at least. He had made up his mind to relieve the dilemma and confess his guilt so that the girl would not have to reproach herself with a betrayal of her lover or her cause, that she might not feel that she had been found wanting at the crucial moment. Indeed, Thorne would have done this before, but his duty as a soldier enjoined upon him the propriety, the imperative necessity, of playing the game to the very end. The battle was not yet over. It would never be over until he faced the firing party.

And then Edith's voice broke the silence that had become so tense with emotion.

(To be continued.)

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Household

HOME-MADE VALENTINES

Half the fun incident to dear old St. Valentine's Day comes before hand in the planning and making of quaint souvenirs for the occasion. If a party or social is to be the special event of that long celebrated day many pleasant hours may be spent at such work, and if several unite their efforts the pleasure is so much greater.

No effort should be made simply for artistic effect. Something provocative of mirth, and which will leave no sting to mar the recipients' enjoyment should be selected. There are well nigh numberless suggestions for such affairs, but a few will serve to start with when others will come to mind.

One unique design is made from two large hearts cut from red cardboard.

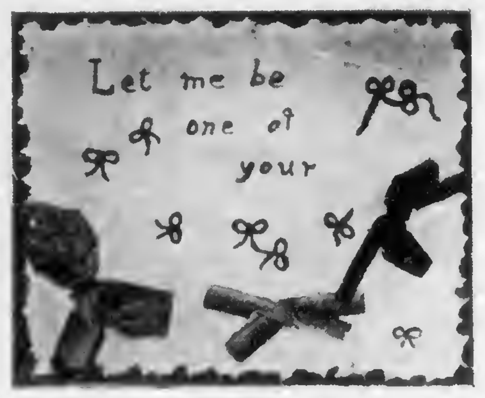

FIG. 1.

On one the words "May Cupid's dart ensnare your heart with mine" are painted in white or gold. If preferred white ink may be used for the lettering. This heart is placed on top and a little to the side of the other, and corresponding slits cut thru the two. A long quill is thrust into these slits, thus fastening the two hearts together.

Fig. 1 shows an oblong card of white bristol board with gold paint outlining its edge irregularly. Gold paint also forms the words "Let me be one of your," the remaining word of the sentence, "beaus," being represented by scattered bows of the gold paint as well as three of narrow ribbons. One of these ribbon bows is in pale green, another in shaded yellow, and the third in red.

In this day of many postals a valentine postal card will be welcome. Any odd little group or figure may be sketched upon the back with pen and ink or water colors, as is shown at Fig. 2. Suitable subjects for this work are to be found in nearly every magazine, but if one is capable of making original designs they will be more highly prized.

Cards cut from water color paper or bristol board may be utilized for other valentines. As these will be enclosed in envelopes, figures cut from colored pictures may be substituted for the pen and ink sketch. Groups of hearts of varying sizes and colors strung on a ribbon will also serve to decorate an oblong valentine.

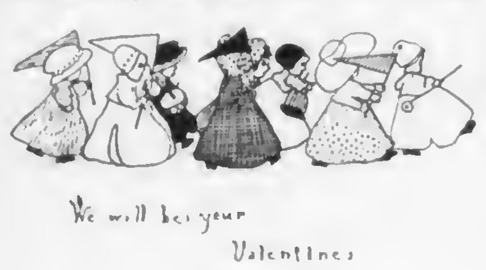

FIG. 2.

Petals cut from tissue paper to simulate a daisy on a large scale will form a quaint valentine. Paste these in the center of a circular piece of cardboard, allowing them to project slightly over the edge. For the center glue on a smaller round of gold paper on which are written these words: "Loves me—loves me not—which?" The recipient is supposed to read his or her fate by the old time method of pulling the petals, one by one.

"There are many raisins (reasons) why I love you" is the inscription on a sheet of cardboard upon which cunning little turtles are represented by raisins and cloves. Plump raisins are utilized, pressed flat and glued to the card to serve as the bodies of the turtles, the stems being left on for tails. Cloves are stuck in the opposite end, the seed pod or blossom out, for the heads. Feet are made from stem ends of the cloves. It is surprising how realistic these little things are. They may be used in various ways.

Still another odd conceit is a card upon which a sole cut from leather is glued, and the words "Upon my" written above, with "I love you" beneath, thus suggesting, "Upon my sole I love you." "With all my heart I love you" may have the word "heart" represented by a red heart pasted on to the card. And thus one might continue to enumerate, but those interested will readily think of other designs equally suitable.—Mae Y. Mahaffy.

Flag Cakes

The square sponge cakes, make pretty little flags to serve at a Washington Birthday party. Ice white, and put lines of red frosting on top, pasting a little square of blue starred paper in the corner of each.

Rice Hearts

Boil a cup of rice in boiling water with a little salt until it is soft and dry. Add a tablespoonful of sugar and a beaten egg and enough flour to make the mixture slightly stiff. Set away to get cold. Mould with the hands into heart-shaped croquettes, dip into cracker crumbs or bread crumbs, then into beaten egg and into crumbs again and fry in deep fat. Hot maple syrup is a delicious accompaniment to this dish.

A Novel Gift.—Here is a novel present that any farmers' wife can give her city friend: Select a large, fine pumpkin; cut off a piece at the top and scoop out the inside. In the cavity put any of the following which suggest themselves as being appropriate: A dressed chicken or duck, some fresh eggs, a roll of butter, some home-made sausages, a few nice apples, some ears of popcorn, nuts, etc. Almost anything fresh from the farm would delight a city friend.

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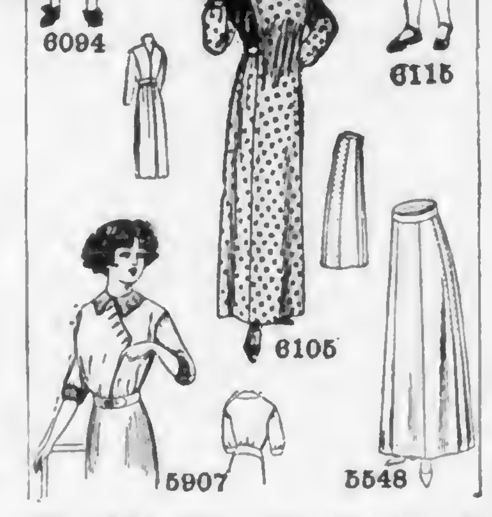

6094—Boys' Suit.—Three sizes, 2, 4, and 6 years. Age 4 requires 2⅜ yards of 36-inch material; ½ yard of 22-inch contrasting material. Price of pattern, 10 cents.

6105—Ladies' Apron.—Three sizes, 34, 36 and 38 inches, bust. Size 38 requires 4⅜ yards of 36-inch material. Price, 10 cents.

6115—Children's Dress.—Three sizes, 2, 4 and 6 years. Age 4 requires 1⅞ yards of 36-inch material; ½ yard of 36-inch satin for belt. Price, 10 cents.

5907—Ladies' Waist, Closed at Front.—Cut in 6 sizes, 32 to 42 inches, bust measure. Size 36 requires 2½ yards of 36-inch goods; ⅝ of a yard of 22-inch all-over. Price, 10 cents.

5548—Ladies' Six-Gored Skirt.—Five sizes, 22 to 30 inches, waist measure. Size 24 measures 2⅞ yards around lower edge and requires 3⅛ yards of 50-inch material. Price, 10 cents.

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Veterinary

(Conducted by W. C. Fair, V. S.)

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Shedding Hair and White Hair Coming In.—Is there a remedy that will change the color of hair that grows on scalded shoulders? This white hair grew on collar galls more than a year ago, and I would like to know if it can be prevented. M. S., Columbia, Pa.—When white hair grows in after skin is scalded it can not be changed.

Weakness—Roarer.—We have a very fine horse, a perfect picture in appearance, besides being well bred. When we attempt to pull him, he seems to lack wind and blows badly. In fact, he seems to play out entirely. He has a slight cough, has a good appetite, but fails to lay on flesh. So far as I can tell, he is not sick. S. S., Glen Loch, Pa.—Try applying 1 part iodine and 10 parts fresh lard to throat every day or two for 3 weeks. If this fails to help him a surgical operation such as is performed to cure roaring had better be done. Give him ½ oz. Fowler's solution, ½ oz. fluid extract of gentian and ¼ oz. fluid extract cinchona at a dose in feed, 2 or 3 times a day. It will be a mistake to feed him too much bulky food when he is working. An overcheck and independent bit with head check reasonably high will make him breathe much easier than if the head is carried low and nose pulled in toward breast.

Stocking.—I have a 3-year-old colt that stocks in both hind legs. He seems fairly well otherwise and has a good appetite. G. B. T., Sandy Lake, Pa.—Stocking is a result of one or more ailments or a sluggish condition of the system. Give 1 teaspoonful powdered sulfate iron, 1 tablespoonful fluid extract buchu, 1 dram ground nux vomica and ½ oz. ground gentian at a dose in feed, 3 times a day. Also apply cotton with bandage over it, leaving bandages on a few hours after swelling is exercised out of legs. Perhaps a change of feed would be advisable.

Wounded Elbow.—Five weeks ago my 3-year-old filly got kicked, making a wound near elbow joint. This wound discharges pus and I am unable to heal the sore. Can you suggest a remedy that will heal this wound? F. R. I., Cory, Pa.—Apply 1 part carbolic acid and 50 parts water and keep the leg perfectly clean. The joint should not be moved. There may be a small splinter of bone that should be removed, then wound will heal. If the joint is open, synovia will be mixed with discharge.

Surfeit.—I have a bunch of hogs that have small red blotches. I have given them home remedies, but these fail to improve their condition. K. S. W., Oil City, Pa.—Dissolve ¼ lb. borate of soda in 1 gallon of water and apply to sores, twice a day; also give hogs ½ teaspoonful bicarbonate soda at a dose, 3 times a day. Your hogs should have a thoro washing with ivory soap suds, twice a week. After sores dry, apply 1 part oxide of zinc and 5 parts vaseline, once a day.

Rheumatism.—My 5-month-old pigs have stiff joints; most of the stiffness appears in hind legs. I feed them corn, middlings and milk, and they have good appetites. B. D. E., Meadville, Pa.—Feed pigs less corn and allow them more exercise. Add oats and oil meal to food supply; also give ½ oz. cooking soda to each hog in their feed, twice daily. Apply tincture iodine to swollen joints, 3 times a week.

Eczema.—My 2-month-old pigs have a scaly condition of skin and itch badly. I bed them with oat straw, feed corn, oats and milk. B. F. E., Washington, Pa.—Apply 1 part oxide of zinc and 8 parts vaseline to itchy parts, every day or two. Bedding animals with oat straw, especially if the skin is white, irritates it.

Canine Distemper.—We have a dog, 18 months old, that has a thick discharge from both eyes, and must have ear trouble, for his hearing is somewhat affected. I applied home remedies and gave dog a physic, but this fails to relieve him. K. I. D., Harmony, Pa.—Apply 1 part calomel and 8 parts boracic acid to eyes, once or twice daily. Give him one or two grains of quinine at a dose in feed, or any other way you please. Also keep him warm and feed him anything he craves.

Thrush.—We have an old horse that is in good working order and sound, so far as we can tell, except his frogs. His hind feet have a strong odor, and pus comes from back part of frogs. He is not lame, but am afraid he will soon limp. H. G. J., Brocton, N. Y.—First of all, thrush is usually the result of too much wet and filth; therefore his feet should be kept dry and clean. Apply calomel to diseased parts, twice daily. I cover the frog with oakum, and believe it assists in keeping germs away from sore frogs.

COUNTY NOTES

York Co., Pa. (S. E.), Feb. 3.—Weather mild, with considerable rain. Beef cattle scarce and high, cows bringing $75@100; fat hogs, 9½@10c lb.; shoats, 8@8½c; butter, 32@38c; eggs, 20c; wheat, $1.01 bu.; corn, 54c; oats, 40c; chickens, 13c. Farmers busy stripping tobacco and caring for their stock.—Clarence D. Emig.

Chautauqua Co., N. Y. (S. W.), Feb. 3.—Weather cool; thermometer 18. Horses, $150 @225; cows, $45@75; hogs, dressed, 10½c; veals, live, 9c; fowls, 13c; dressed, 19@20c; apples, 50c bu.; parsnips, 65c; potatoes, 60 @75c; hay, $16 at barn, $20 delivered; straw, $10@12; wheat, $1.10; oats, 45c; bran, $1.35; meal, $1.20. Work well along. Grape trimming nearly done, and a good out look for a fair crop of fruit.—J. L. Barber.

Northumberland Co., Pa. (C.), Feb. 1.—Weather varied, with rain, snow, wind high and temperature. Fresh cows scarce and high, from $35@60. Horses fair price. Porkers most all butchered now. Butter, 30@38c; eggs, 20c. Farmers getting sum-

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mer wood in. No ice for summer use. Many sick people thruout this section.—George A. Hockley.

Crawford Co., Pa. (N. W.), Jan. 31.—The warmest January for years. Lots of rain and mud. Fields of wheat and grass look green. High water. Dressed pork, 9c; beef, by side or quarter, 8@9c; eggs, 23c; butter, 30c; potatoes, 50c; apples, 50c. Some plowing done in January. One of the best poultry shows ever held in this section is on at Saegertown.—J. F. Seavy.

Wayne Co., Pa. (N. E.), Jan 30.—Weather warm and changeable; stormy. All kinds of stock doing well. Potatoes and apples scarce and bring good prices. All kinds of meat high. Oats, 39c bu. Milk and butter bringing good prices. Work all in good shape. Manure is drawn as fast as made. A very open winter.—E. W. Carl.

Luzerne Co., Pa. (E. C.), Feb. 1.—Weather stormy. Live stock scarce. Winter grain looking good. Corn, 80c bu.; potatoes, 70c; wheat, $1; rye, 75c; oats, 40c; timothy hay, $18 ton; clover hay, $17 ton. Pruning fruit trees about the only farm work that is receiving attention at present.—N. C. Brown.

Warren Co., Pa. (N. W.), Jan. 28.—Weather very changeable; warm, wet and cold, with no snow. Most all stock looking well but scarce and high. Hay, $12 ton in barn; cows, $50@100; hogs, dressed, 11c; butter, 38c; eggs, 30c; horses scarce and high. No lumbering done because of no sleighing.—Clyde Firth.

Chester Co., Pa. (S. E.), Feb. 2.—Unseasonably warm and open. Beef high. Calves, 10c; hogs, 9¼c; young poultry, 17c, dressed; eggs, 27c; potatoes, 75@80c; hay, $15@17, as to quality; milk, $1.80 cwt. Feeds going up. More plowing done than in recent years. Farmers are busy hauling manure. Conditions are good.—Hayes C. Taylor.

Warren Co., N. J. (N. W.), Jan. 31.—Warm and foggy; thunder showers. No frost in ground. Prices for good stock are high. Eggs, 26c; butter, 36c; corn, ear, cwt., 75c. Help scarce and high in price.—V. P. Loller.

Perry Co., Pa. (C.), Feb. 3.—Weather very mild, with cold a few days since. Stock looks well; some is being filled for public sales early next month. At a sale of Virginia colts last month, they sold very low. Scarcely any stock is changing hands at this time. At a recent sale of western horses few were sold on account of insufficient bids; were good stock. Sold for $250@500 per pair. Wheat, $1; corn, 60c; oats, 40c; potatoes, 60c; eggs, 20c; country butter, 28c; butter fat, 34c; hay, $14 ton. No ice. No farm work being done.—Samuel B. Swartz.

Delaware Co., Pa. (S. E.), Feb. 3.—Weather has been very warm; now snowing. Stock in good condition. Eggs, 25c at store; hens not laying well, however. Corn, 60c; oats, 48c. Hay in small demand at $16.50. Peach tree buds have advanced badly; will be damaged by severe weather.—Chester W. Ambler.

Montgomery Co., N. Y. (E. C.), Jan. 27.—Weather mild; cloudy and foggy; no snow. Butter, 32c; eggs, 25@28c; potatoes, 75c; pork, 11c. Beef high. Not much hay being moved. No ice harvested. Sawmills idle. Tax rate in rural districts, $15 to $17 per $1,000. New granges organized at Freysbush and Fonda. Minden and Canajoharie sell bonds for good roads.—John L. England

CATALOG NOTES

Perfect Barn Equipments.—This is the title of a new booklet issued by the Louden Machinery Co., 683 E. Broadway, Fairfield, Ia., describing a complete line of barn equipment. The line includes hay carriers, reversible jack outfits, power hoists, hay slings, hay forks, pulleys, door hangers, litter carriers, stanchions, etc. Write the above address for a free copy.

A Mechanical Wonder.—The circular matter telling of the new Planet Jr., No. 10, Horse Hoe describes a veritable mechanical wonder. This little machine even outdoes the other Planet Jr. horse hoes, in that it is adapted to a wide variety of uses. It works a number of crops from beginning to the end of their cultivation, being adaptable to such crops as tomatoes, peas and potatoes, and has a vine turning attachment which permits of equal efficiency in working such crops as cucumbers, cantaloupes and other vine-growing vegetables. Every gardener and general farmer owes it to his work to make an investigation of this little machine. Its inventor counts it the masterpiece in his long list of farm and garden tools. Descriptive matter is sent free upon request to S. L. Allen & Co., Box 1202E., Philadelphia, Pa.

Stokes' Standard Seeds.—The Stokes Seed catalog for 1913 comes out brighter and more complete than ever. The quality of these seeds has been so well established that it needs no further comment. A number of specialties and special selling plans are offered this year, which every reader should investigate. The catalog will be sent free if you write for it, addressing Stokes' Standard Seeds, Dept. 128, 219 Market St., Philadelphia, Pa.

Prize Potatoes.—One of the first parcels received at our office by parcel post contained two sample potatoes from the Bowker Company. One was of the First Prize crop Green Mountain, showing a yield of 545 bu per acre, of which 77 percent were table size and perfect in cooking quality. The other was of the second prize, Pride of Vermont showing a yield of 527 bu., 73 percent of table size. Both were perfect specimens, and of the popular market type. Descriptive matter and report of the contest will be mailed free to any reader who writes for it, addressing the Bowker Fertilizer Co., 49 Chatham St., Boston, Mass.

Farm Seeds.—The Dibble Farm Seed Catalog for 1913 describes and illustrates a full line of seeds for the farm, including oats barley, corn, alfalfa, clover, timothy, potatoes. All seeds are tested and of known quality. The catalog is free to those who write for it to Edward F. Dibble, Box D. Honeoye Falls, N. Y.

Garden and Farm Almanac.—The annual garden and farm almanac, issued by the Doubleday, Page & Co., is a very convenient book for any farm. The 1913 almanac, now out, contains all of the usual almanac features, with records and notes on poultry, dogs dairy cattle, swine and sheep; instruction and formulas on insect destruction, notes on the common insect and fungous pests; score cards on various classes of live stock and farm crops, and miscellaneous tables and statistics. It contains 248 pages, is well printed and illustrated, and sells for 25 cents. Address Doubleday, Page & Co., Garden City, N. Y.

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ESTABLISHED 1880

PUBLISHED WEEKLY

VOL. 33.—No. 8. PHILADELPHIA, PA., SATURDAY, FEBRUARY 22, 1913. 50 CENTS A YEAR.

Headle Dr. T J cg13
Rutgers College
Johnson S P R19

Unjust Tax Burden on Real Estate.

By J. T. AILMAN, Secretary Pennsylvania State Grange.

Perhaps in no other state in the Union is the principle of obtaining state revenues from personal and corporate property and local revenues solely from real estate so closely adhered to as in Pennsylvania. Many years ago, when the principal was adopted, it was fairly equitable, for then corporations were few and small. But the enormous growth of this class of property in recent years has caused the tax burden here to be most unfairly distributed. Indeed, it would be difficult to find a state where it is so much out of proportion as with us.

The corporate wealth is now more than $7,000,000,000, while the real estate is worth little more than $4,000,000,000. The state revenues for the current year are estimated at $27,000,000. Nearly one-third of this is derived from licenses, inheritances, fees, etc., leaving only two-thirds to be raised by direct tax on personal and corporate property. The local governments will require not far from $80,000,000, and real estate must pay it, all but the trifle that is returned to the counties by the state from the personal property tax and the school appropriation. To raise this money will require a mill rate averaging nearly 20 mills, and reaching more than twice that in some sections, as against less than three mills paid by the other interests.

Neither argument nor comment are needed to show the unfairness of this. Few will dispute the claim that one man's dollar is no more sacred than the dollar of another, and that it should bear the same share of the burdens of government. If there is to be any difference, the dollar that brings in the largest return should bear the heavier burden. Whose dollar is the most profitable? Facts show that it is not the dollar of the farm.

No small portion of the real estate of the commonwealth of the state consists of homes. However productive these may be of comfort and happiness, they are a source of expense and not of income. The widow who puts $1,000 in a little home pays $20 tax each year, while the bachelor who invests the same amount in the stock of a dividend-paying corporation gets off with $3. The corporation largely fixes the price at which its wares or services are sold. The price of the staple products of the farm is fixed in the markets of the world, nor does the farmer name the prices in the local market to any extent.

Among the tillers of the soil there is competition. Among the special interests there is combination. Agriculture in this state is depressed. Notwithstanding the general protest against the high cost of living, and the common belief among the city dwellers that the farmer is reaping a rich harvest, people are not crowding each other to buy farms. The fact is that from 1880 to 1900, of the few farms that did change hands, many of them did so at a price that was less than the cost of the improvements on them. Even in the last decade, farm values here have made nothing like the advance that they have made west of the Alleghenies, and our rural population decreased by more than 100,000. In fact, 19 counties showed a net loss in population, altho the entire state gained more than 1,000,000.

NOT ALONE A PLEASURE CAR.

A Jersey Farmer Returning From a 28 Mile Trip After Two Hogs and 17 Pigs. A Load of 700 Pounds.

Because his income will not allow it, the Pennsylvania farmer can not go into the labor market today and compete with other employers. He must take what they can not use. Often he goes without, and much work that ought to be done is not done. Make it pay and he will double the production of his fields in five years. He can not make two blades of grass grow where one does now without more help, nor can he do it without some profit on the extra blade.

The unjust tax burden is not the only cause of present conditions, but it is an important factor. The remedy is simple, but to get all parties to agree to apply it is not easy. In the first place, it costs too much to be governed; but to protest against this is like beating a stone wall with the fist. Public expenses are constantly on the increase, and that too often without a corresponding increase in benefits to the public. The increases are not often asked for nor sanctioned by the farmers. Should not those who are responsible for them bear the burden? Yet they will shift it if they can.

Even now, rather than submit to an additional mill tax on corporate property for road purposes, which would give the Highway Department all the money that it could use, they are willing to discount the future and borrow. A one mill tax on the personal and corporate property of the state would furnish money enough, which, if economically, honestly and intelligently used, would in a short time give us a better system of roads than we will have if we borrow, not $50,000,000 but $150,000,000, as we will have to do to build even the Sproul roads at the present cost per mile. Another mill for school purposes would pay the minimum salaries of the school teachers for the minimum term.

With these additions the intangible property of the state would pay less than one-third of what the home owner pays, and yet it would give a greater stimulus to agriculture than all of the new fangled schemes for rural uplift that are now being foisted upon us.

Note.—We suggest that readers keep this article on file for future reference, or better still, use it in developing local discussions on taxation in your institutes, granges or farmers' gatherings. The question of equalization of taxes is certain to be a prominent one in the next few years, and the figures given here have a direct bearing upon the road bond question, which threatens to be up for decision in the near future. This article gives figures which should be kept clearly in mind in both of these questions. Cut out the article and save it, or file the paper away where you can find it when wanted.—The Editors.

FARM BUREAUS IN NEW JERSEY

By D. T. Hendrickson, Monmouth Co., N. J.

Co-operative farm demonstrations were started by the Government in an effort to bridge the chasm between the science and practice of agriculture, bringing the knowledge of trained experts directly to the farmer. The work is just as practical as it is possible to make it, and only men brought up on a farm, who have been graduated in a reputable agricultural school and who afterward have had five to ten years of actual farming experience, are employed by the Government as demonstrators.

These men go into a county, establish central headquarters, study the methods of farming in the community and agricultural possibilities, and after learning just what is contributing to the success or failure of various farmers, begin demonstrations and help in the adoption of better methods. Proper cultivation, selection of best paying crops, seed selection, crop rotation, proper handling of live stock, labor problems and other important phases of farm management are covered in the demonstrations in those sections where co-operative agreements to carry on the work have been made with the Government. These co-operative agreements are made on a basis of an equal division of the expense of the demonstration between the Government and state, county, civic organization or public institution which requests the introduction of the work.

The first experiment in either New York or New Jersey was inaugurated about two years ago by the Lackawanna Railroad for the betterment of agricultural conditions along that road. The first bureau was established at Binghamton, N. Y., at that time, and its work was so well received and showed such promise of benefit to the farmers in Broome County, that about the first of last year two more bureaus were established—one at Elmira, N. Y., and the other at Newton, Sussex County, N. J. These three bureaus are now in a flourishing condition and are meeting with the favor of the farmers, as well as business men interested in building up agriculture in those sections.

In proof of the energy of the farm bureau of Sussex County and of the responsiveness of farmers to the application of the doctrines of agricultural conservation in the last few months, experts predict that within another year land values, heretofore set even lower than the improvements, will have increased from 25 to 100 percent. Sussex County was picked by the farm management of the Bureau of Plant Industry of the United States Department of Agriculture as a representative agricultural region of the state, and as the best place for the establishment of the first bureau in New Jersey. This was last March and Newton, the county seat, was chosen for headquarters. In November another similar station was established at Trenton for Mercer county.

In establishing such stations to perform farm management, make field studies and do demonstration work, it is the principal aim of the office of the Federal bureau to obtain the necessary practical information to formulate systems of management for farms of various sizes and types in different locations, and to obtain other data with a view to helping the soil workers in their daily practices.

To support the Sussex County bureau a co-operative arrangement was entered into by the county, the Lackawanna Railroad, the New Jersey State Agricultural Experiment Station and the Federal Bureau of Plant Industry. The state experiment station agreed to give all possible information, while the other three parties gave $900 each and a further sum of $1,300 was raised by popular subscription. More than 290 persons have helped. It is believed that when the next call for funds arises there will be no hesitation, as the value of the bureau's service is undisputed.

H. W. Gilbertson, an expert agriculturist, previously connected with the Government agricultural service, and trained in the particular line of work to be established, was placed in charge of the Newton bureau as manager. After his Newton appointment, Mr. Gilbertson's first duty was to become acquainted with the farmers. To this end the new departure was well advertised thru the press and mails. Then the county was mapped into districts, so that each farm could be numbered when visited and data concerning its system of management, the crops grown, the amount of live stock kept and every other agricultural matter of a valuable nature collected, recorded on index cards formulated for the purpose and filed for future reference.

The successful farms are being studied to find out what combinations of crops and live stock are most profitable, and what farm practices of management help to make these farms successful. The unsuccessful farms are being studied for the purpose of determining the causes of their failures. Systems of farm management are suggested and plans for the reorganization of farms with a view to securing the proper combinations of crops and live stock so as to utilize the land, working equipment and capital to the best advantage, are proposed where desired.

Mr. Gilbertson spends the first five days of each week visiting the farms and farmers. Those requiring his services most are visited more frequently than the farms under more systematic management. When some problem arises that needs instant solution, a written or telephone request brings the director of the farm bureau to the farm immediately, and suggestions are given to meet the difficulty. Thus the farmers of Sussex County are ever under the protection of a trained agriculturist.

Each Saturday the office of the bureau at Newton is open and the farmers are invited to interview the director in town. This at-home day is a busy one for Mr. Gilbertson, for aside from the visits of a score or more farmers, many letters of inquiry are unswered and material for extension work is prepared. A library of agricultural books, and shelves of bulletins on every phase of farm work are maintained in the office. Here the farmers can read and inspect practically all the available printed matter there exists relative to the subjects in which they are most interested.

A feature of the work that is being energetically and systematically followed, and one that is not a compulsory part of the bureau's duties, is the lecture series given by Mr. Gilbertson before schools, granges, teachers' meetings, agricultural clubs and other organizations. Small groups of farmers are also brought together in various parts of the county and informal meetings held in school houses and other similar places.

The purposes of the Mercer County Bureau are stated as follows:

1. The bureau will study the conditions affecting agriculture in Mercer County as a whole and on the individual farms. In the investigations, considerable information of a confidential nature is often needed. Such information will always be regarded as strictly confidential, and not for publication, except as used in averages without names.

2. It will carry the successful lessons from one farm to others where needed.

3. It will gather the knowledge gained by the United State Department of Agriculture, by the state experiment stations and by successful farmers, and adapt it to the needs of Mercer County.

4. It will be a general information bureau for the farmers of the county, maintaining a reference library of agricultural bulletins and books, lists of seeds, farm machinery and similar information.

5. It will, so far as possible, take an active part in all movements for the agricultural betterment of the county, such as for better roads, better transportation facilities, better schools, better markets and better co-operative methods.

In carrying out the above purposes, plans will be made for the co-operation of the bureau with as many farmers as possible in the county and for other activities.

The Truth About "Free Land."

WARREN FERDE WILCOX, Colorado

One hears a great deal, even in these days, of "free government land." I often receive letters from people in the East thinking of trying to get some of this "free land." It is extensively advertised as a great boon in this day of high cost of living. No wonder so many are inquiring about it. As this "free land" is mostly located in the arid West, a word about it may be of some value to inquiring eastern people.

"Yes, there is "free land." But that is not all. This so-called "free" land has lain for ages baking in the eternal sunshine of the desert, and will not germinate a seed until water is applied artificially. "Free land" of account is not so plentiful as years ago. Those who came in early, got in on the ground floor and took up homesteads near towns and railroads in the fertile valleys under the surest water rights, and are now worth a good deal. Land thus secured years ago by simply paying filing fees and thru all the intervening years improved and possessing as it does the advantages of being near to town and railroad, and having infallible water rights, is worth all the way from $100 to $1,000 an acre right where "The Great American Desert" of our school geographies of a generation ago was portrayed.

Today there remains vast areas of land still known as "government land." But what is it? It embraces hills and mountains, the most rugged stretches of land the country possesses. There are in places valleys and mesas of arable land which, if it lay in the rain belt, would be valuable. But lying, as it does, without any possible source of irrigation water, these acres will always remain just what they are now, desert.

But the government reclamation service, as well as countless private enterprises, have been and are at work constructing canals, tunnels, reservoirs and dams at enormous expense, some enterprises attaining to the sublime value of five or six million dollars. Each of these will water a large tract, and as fast as the water is available the tract is thrown open for settlement. Projects under the supervision of the government may be relied upon. Water will be available. But in the case of some private enterprises, more land is thrown open than the enterprise can ever water. Let it be known that these private enterprises are out for the "dough." And the big land openings and drawings they have attract large numbers of people. In some cases, one especially, the land thus distributed with a big drawing was of a kind almost utterly worthless. In another case, just aired in court, it was proved that in order to get water onto the land in question it would be necessary to run it up hill, just how many thousand feet, I forget.

But the point is this: This desert land is no good until water is applied, and water is not free. When the first land was taken up, the first settlers filed on the nearest water available, and in most cases it cost them little, for they just took what water they wanted from the river flowing close by. As soon as more land was taken up and the demand for water increased, it was necessary to go to greater expense in order to procure water. Miles and miles of very difficult ditches had to be made, winding round and round the mountain sides, where rocks and slides and cloudbursts made both the initial cost and the cost of maintenance very high. From a moderate cost of the water for the first irrigationists, the expense has now gone up to $100 an acre in many places. If you can get water rights that are worth anything for less than $40 or $50 an acre you are getting a bargain.

Suppose an eastern workingman, tiring of the galley slave life he is living, and endeavoring to meet expenses with his little wage check, hears of this "free land" and starts out. He has a few hundred dollars and journeys all the way to the "free land." He files on 160 acres of raw land, just as it was made. He pays his fee and starts in. It probably lies a long distance from town, all the way from 10 to 50 miles. There is not a blade of grass upon it, not a fence post—nothing. He purchases a team and wagon and goes out to it. But first he must take along a tent and bed and cooking outfit and firewood and whatever else he fancies he needs. He must have provisions, and also feed for his team. He goes out and pitches his tent. Then he looks for water. Maybe he will have to haul it several miles.

Where is he going to begin in order to make the desert bloom as the rose? It is a job—a big job—but thousands have tried it before him and many, the most, have won out. Everything costs high in the western land, and almost before he knows it his money is gone. Years ago, when stuff was freighted in by wagon over the passes hundreds of miles, prices were necessarily high, and today many retailers still cling to the high prices, prices in some cases being higher than they were in the freighting days. If you kick about the prices, you will hear about "high freight rates." You get that dinned into your ears all the time.

By the time the homesteader gets the conventional one-room, box-car shack built, a dug-out barn made, some fencing done, machinery bought, a cow and poultry and hog purchased and feed for all, he is broke, and badly in debt if he can get credit. And nothing coming in. He may get to plowing the sage brush, turning the soil that has lain baking from the initial day. After he plows he harrows and levels and seeds, but nothing will germinate until water is applied. But water costs money. So he buys water, if he can. Mind you water at $50 an acre for a tract of "free land" will make that land cost as much as a farm with all improvements "back east," And maybe he has to pay more. Great opportunity for a poor man trying to get a start!

But when he buys water that is running thru a ditch miles from him it does him no good. He has to go to work and build a lot of ditch. That costs money. Finally he gets the water to his place. If he has his crop in and the field marked and his laterals made he can begin to irrigate. But he can't expect a bumper crop the first year. It requires years to subdue the untamed land.

Then look at the other work that looms up. There never was a man with so much hard work before him as the homesteader. He has everything to do. Before winter comes on and the ditch is shut off he must make a cistern in which to store water for domestic purposes and reservoirs for stock purposes. Then he needs cellars for his vegetables, and so the work goes on, the hardest kind of toil. Then if he has anticipated fruit, he wishes to start fruit trees as soon as possible so they will be growing. And all the while he is living in a shack that eastern farmers would consider too wretched for their poultry or pigs.

A man with a few hundred dollars can not expect to win out in this way on "free land." The United States Reclamation Service admits that. Several thousand dollars are needed, tho he may get along on less. I know one homesteader near me who lives in an isolated place. His family lived in a tent two winters with small children, one a mere babe. He worked on a ditch all the time, while his wife held down the claim. He was away all day, starting in winter before sun up and was back late at night; and she, pluckily, with the children isolated as they were with no other habitation in sight, held down the place.

But if a man has $2,000 or $3,000 he is not liable to go to homesteading, but will buy an improved place at first and avoid the hardships and privations. The homesteader's nose is on the grindstone every minute. There are few pleasures for him or his. There are expenses constantly arising that were unexpected. And the income the first year is little, if anything; the second is little better. By the third he can get alfalfa to producing so as to maintain his stock, and he can begin to get strung out.

There are cases where the homesteader would not have such a wretched time. Suppose an eastern farmer with a complete outfit desires to try it. Maybe he has been renting in the East, or perhaps, on account of the health of some member, he makes the change. He arrives with a complete equipment of horses, cows, hogs, poultry, machinery, furniture, etc., and with enough ready money to start. He will make it all right and soon have a valuable home. If he has money to buy water, provisions, feed, clothing, fences, and be able to engage help to break up his land, build fences, ditches, cisterns, reservoirs, corrals, buildings, etc., he will get on nicely.

But the poor man with little money can not get on. I have in mind a man right here in the West who filed on a pretty piece of land not very far removed from town. But he can't make it. He has paid out several hundred dollars for water rights, so as to hold onto his claim, but as it is necessary for him to move on he will lose, for he hasn't the capital to go out there and live six months. A splendid opportunity to make a stake and a home is at hand, but he can't improve it.

I would not have the impression left by this article that irrigation farming is not the right thing. Irrigation farming is the ideal farming. Under it there is no drouth, no flood; the water is under control and applied just as the crop needs it. Hence we have big yields under the system. But there are certain things which "tenderfeet" should bear in mind when thinking of making a change. Land, just land, in the desert is not worth while. It must have water and there is a great deal of land that in the rainy country would be ideal, but where it is now it will always be desert. So land to be of value in the desert must be located so that water can be applied to it. Then there are various kinds of water rights. Some rights carry plenty of water in the spring, when the rivers are swollen with the melting snows of the mountains, but as soon as summer comes on and the water is needed it is not there. Such rights are of little value. But if you can get a right that ensures water all the season it is invaluable.

There is a great deal of expense connected with irrigation. The first cost of water, the yearly assessments for maintenance of ditches, your own work on the private ditches, the extra work of preparing the soil for irrigation in the way of leveling, marking and irrigating. Yet the increased yields should meet the extra expense and more, for failures are rarely known after one is established.

I am sorry that the "free land" thus advertised is not available to the poor people who have the back-to-the-land yearing. But for those with little money, it seems to me that they had better buy one of those so-called abandoned farms of the East which I see advertised for $25 an acre up, with buildings that cost more than the farm is offered for today, with fences, wells, cellars, the land subdues, orchards, etc., meadows and various improvements, all ready so that the very first year there is an income. "Free land" is about as much value to the poor man desiring to farm as a free factory site would be to him if he would build a factory. And whenever poor people write me inquiring about homesteading I am obliged to tell them the truth, for I have seen enough of them try it and in time lose out, being obliged to go away penniless, having wasted several years and all they possessed in the attempt.

Note.—This article presents a side of present-day homesteading which every prospective homesteader should consider. It is accord with the verdict of every honest investigator. Irrigated land sections offer alluring inducements to the purchasers who can afford the first few years of trial and hard labor. But they offer little to the poor man seeking a home with immediate income. Honest promoters do not encourage such purchasers. The poor man with no income or ready capital will fail, and failures hurt progress and add nothing to the wealth of the district. This article simply impresses the precautions which should be taken in buying land any place. Go and see the land and the surroundings before you buy. The railroads advertise special rates for this purpose. Time and money spent in previous investigation are the wisest part of such an investment.—Editors.

EXPERIENCE WITH SOY BEANS

Referring to the article on soy beans, page 3, issue of November 30th, I have been growing soy beans on my farm here in central Delaware for at least 10 years past, and can fully indorse all that is stated in the article referred to.

One most important point to be considered is not mentioned at all, however, and ignorance of it might cause failure in an experiment which would otherwise be successful—selection of the variety best adapted to the conditions, location and object of the experiment. There are very many different varieties of soy beans, which differ greatly in habit of growth, time required for growth, quality and size of forage, prolifiicness, etc. I have grown many different varieties, some of which grew five and one-half feet high, and did not fully mature seeds in 140 days of growth. Other varieties were fully ripe in 76 days and only 22 inches high.

I grow soy beans for hay, soil improvement and seed. The Wilson variety seems to combine more good points which adapt it to my use than any of the other varieties. This season I planted the Wilson beans on June 7th, and cut them for seed and hay on September 11th. They were plenty ripe enough to cut on September 7th, or 90 days from sowing, but pressure of other work delayed the cutting. Before cutting, they stood 34 to 40 inches high, and leaves were yellowing some a little way up from the ground. These beans were cured in cocks, so as to retain all the leaves for feeding.

I find that the best time to plant soy beans is in June, from 1st to 15th. Have the land freshly and perfectly worked, and drill in the seeds with a wheat drill, using all the tubes, and set to sow six pecks of beans per acre. The growth is upright, and they are easily cut with a mowing machine.

Well cured soy bean hay is equal in feeding value to best alfalfa hay. Experiments at the Delaware station have proved that the soy beans leave more than twice as much organic matter in the soil by their roots than cowpeas do. —E. G. Packard, Kent Co., Del.

Selecting The Site For a Young Apple Orchard.

By SHELDON W. FUNK, Berks Co., Pa.

There is, possibly, no branch of farming which has made such rapid changes within the last decade or two as has orcharding. At that time orcharding was merely a side line upon the farm; almost every farmer had his home orchard, where he produced sufficient of these luscious fruits for his own table and some to spare. However, in many sections the San Jose scale and other insects and diseases have completely destroyed the old home orchard; the result has been that orcharding has taken on the commercial aspect. The apple is impressing itself upon a great many men, and I find in traveling over this state that possibly the most perplexing question facing the prospective orchardist today is whether or not, by the time he gets his trees into bearing, the markets will not be glutted by the fruit from these millions of trees which have been set within the last few years. Far be it from me to take the role of a prophet, but after considering the problem from all sides, I am led to believe that there will always be handsome profits in orcharding for the man who is willing to learn the business from the ground up, for the man who can grow nothing but the highest quality of fruit. That means the selection of the best varieties, the proper care of the trees and fruit and the ability to market the finished product.

ORCHARD UNDER SOD MULCH CONDITIONS.

Trees Are Not Uniform in Growth and Much Damage Has Been Done by Mice and Borers

Thousands and thousands of these trees which have been set within the last few years have been planted with the "get rich quick idea," and when these men fail to make a fortune within a few years, as is certain, they will be badly disappointed and allow their orchards to rapidly go to ruin.

First, in the selection of the site or the location of the orchard, there are so many little things which may make for success or failure that we can not afford to place the orchard at random. It's a life proposition. Apples do well on a large variety of soils, but do best on deep, rich, well-drained clays or loams. It is very important that the soils be good and rich when the trees are set, because they are going to pump out the moisture and fertility from that soil for a large number of years, and we want the trees to make a good, vigorous growth the very first year.

New lands are very good for orchards if the stumps and roots have been removed before planting, but even then I think you will find it more profitable to grow several cultivated crops, as corn or potatoes, on this new ground before setting the trees, as the soil is then in much better condition. On land which has been covered with oak there is considerable danger of being troubled with root rot, when planting immediately after clearing, since the root rot seems to be caused by a fungus found on the oak.

If you are planting on farm land of only moderate fertility, let's first fill the soil with vegetable matter, turn in several crops of clover, vetch or cowpeas, so as to give the soil the proper physical condition and also supply the young trees with plenty of fertility.

The best location is the gentle sloping hillside, which gives you good surface and air drainage. Surface drainage is very important, because no trees will thrive in cold, water-logged soil; we must get air into the soil before the tree will grow properly. However, air drainage is just as important, on account of those late spring frosts which oftentimes destroy the apple blossoms. Cold air is heavier than warm air, and it rolls down the hillside, settling at the bottom in the valleys. Keep the orchard out of the deep, narrow valleys; also avoid pockets on the hillside.

The matter of air drainage was very forcibly impressed upon us this year in one peach orchard. This entire orchard was fairly well elevated, but part of it runs into a very small hollow. Here trees which should have given 10 baskets of peaches didn't produce that many fruits. When we came out of the hollow 10 or 15 feet, the bottom of the tree had no peaches, the top half had a good crop, and by the time we came up 15 feet higher the entire tree was loaded with fruit, clearly showing the great importance of keeping the peach away from the lower ground.

In regard to exposure, I think in the majority of cases in this state there is very little difference. A tree on the north slope will bloom just about as soon as one on the south slope, because sap circulation is caused by the effect of the sun upon the branches of the trees regardless of the condition of the roots. I would pay more attention to the prevailing winds than to the exposure. However, if you have a choice of exposures, use the north and east slopes, because conditions are less variable. A hot sun on the southwestern slope in summer time often causes more damage by sun scald than all the cold weather.

In selecting the site for a large commercial orchard, the transportation question should be seriously considered. It is quite expensive to haul fruit long distances, and it also greatly injures the keeping qualities. I would far rather pay a higher price for land close to the railroad than buy cheaper land a great distance away.

After we have carefully selected the best possible location, we are ready to prepare the soil for the trees, and here let's make haste slowly. Don't think of planting the trees until the soil is in the best possible condition. Plow deep and well, no matter if we do bring up a couple inches of sub-soil; we can improve it better on top than 12 inches below the surface, and at the same time we want the roots of the tree down in the good soil. After it is plowed deep, we are going to harrow it thoroly, so as to have the soil well pulverized, the soil particles in the finest condition and

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the whole field looking like a garden. Of course, it will mean a little more work, but it will pay in the end.

How about dynamiting? That's a question that is puzzling quite a number. I don't think that any man, at this time, has had enough experience to make the definite statement that it is profitable or not. Then again, it may be profitable in one locality and of no benefit in other localities. Where there is a very stiff hardpan close to the surface it might pay. Look around and see what kind of growth the apple trees are making on your kind of soil. If they are large and vigorous, all right; they grew without dynamite, so will yours. If they are rather small and stunted, look for hardpan and see of you can find any. If you are going to dynamite, do it about six months before planting, so as to allow the soil to settle and prevent dead air spaces.

Note.—This is the first of a series of articles by Mr. Funk, discussing topics of vital interest to orchard men. Subsequent ones will appear in issues of the near future.—Editors.

DEKALB LOAM FOR FRUIT

The DeKalb shale loam is referred to as well adapted to fruit raising and not so well adapted for grain. I have a field that is typical of this kind of soil; it is of a light weight and of a yellowish gravelly nature. The field slopes toward the west and north, and is somewhat subject to erosion. Am thinking of planting a hundred or more peach trees in it. Can you recommend this for peaches? What kind of peaches do best for this soil? Would you put ashes to the trees in planting? What size trees thrive best?—J. D. H., Montgomery Co., Pa.

A YOUNG PEACH ORCHARD IN CLEAN CULTIVATION.

The DeKalb shale loam is, as a rule, a good fruit soil, and also a good grain soil, if properly handled. It responds more readily to fertilizers, and especially to barnyard manure, than do some of the heavier soils. It needs organic matter, especially that from the clovers, peas, beans or other legumes. To make it fertile, and to get good growth, liming is necessary. If on this kind of soil liming is judiciously used for the growing of legume crops, and the rule is made to work one or more legumes into every rotation, the soil is rendered very productive. It is easily cultivated and quite desirable for farm crops or grain crops, as well as for fruit. There is danger of over-fertilizing in growing fruits on this soil, as the roots spread and penetrate easily, and where the soil is deep trees grow rankly.

In growing fruit on soil derived from shale, the chief point is to be sure that it is deep soil with a good, deep moisture-holding sub-soil. If the soil is but a few inches in depth, immediately overlying slate or shale that is not rotted or disintegrated, it will not hold moisture well, and the roots of the trees will not penetrate deeply enough to get much moisture in dry seasons. The growth of the trees will then be stunted, the trees remain small, and the fruits of small size, such as are seen on starved and thirsty trees.

As a rule, the soil is washed away more on a western slope than on that of any other direction, but there is nothing of importance in the idea of the direction of slope. Where one has a difference of slope he can make use of it to place early varieties on the southern and western slopes, in order to get them yet earlier, and thus get the benefit of the prices that extra early varieties bring; while on the northern slopes he can reverse this, and plant the late-ripening varieties, and have them ripen yet later, and get the benefit of the higher prices which are generally received for extra late fruits or produce.

Peach trees should do well in the soil concerning which inquiry is made. I recommend for the western slope early varieties, such as Greensboro, Hiley, Carman, Belle of Georgia and some Elberta. For the northern slope I recommend Elberta, Reeves' Favorite, Smock, Fox's Seedling and Wonderful.

Do not put wood ashes or any kind of fertilizer or manure around the exposed roots of trees in planting. Put good earth, both under and over the roots, and scatter ashes on the soil around the trees, and keep this cultivated or mulched. Where it is liable to wash, use vegetation of any kind as a mulch, and thus prevent washing.

The best results will come from planting one-year-old peach trees. Trees of middle to small size will give satisfaction, if they have good root systems, but stunted trees or two-year-old cutbacks should not be used.—Prof. H. A. Surface.

RECLAIMING ORCHARDS

A paper, giving some important information on the reclaiming of unprofitable orchards, was read by Prof, C. G. Woodbury, of Purdue University, Lafayette, Ind., before the State Horticultural Association of Pennsylvania at its recent annual meeting in Harrisburg.

There are altogether eight orchards under the supervision of the Department of Horticulture of Purdue University, which are managed in accordance with specific directions. The work has been going on for the past two years.

Two main objects are kept in view: The furnishing of centers of interest and all-the-year-round object lessons in good orchard management in communities where the development of fruit growing may be properly encouraged; and, secondly, the giving of the opportunity to study, at first hand, thru orchards owned and operated by farmers, and thru itemized cost records of every operation, the economics of apple growing.

Each owner signed an agreement to follow the directions of the department; to do such work at such times as the department might direct; to procure such tools, materials and spray outfits as would be specified; and to keep such cost records, fully and accurately, as might be required.

In no case was an orchard taken as a demonstration project which was already profitable. Some of the orchards accepted for supervision had been neglected for years, while others had been cropped and some pastured. In several cases attempts had been made to spray, but, owing to poor equipment and ignorance, the efforts to protect the apples from insects and disease, and produce profitable crops, had been unsuccessful.

Professor Woodbury described the methods of supervision as follows: "Enough visits were made by the inspectors of the department to each orchard each season to insure a thoro understanding of the instructions previously given to the owner. A day or two may be spent in a new orchard in the late winter in getting the pruning work properly started. When it is apparent that the owner understands what needs to be done, and has developed enough judgment to go ahead by himself, he does so. Similar visits are made when it is time to do any particular spraying, or when the cultivation seems to lag, or when the cover crop should be put in.

"A check plot is left in each orchard in the same condition as when the treatment started on the other part of the orchard. The proportion between the percentage of sound fruit on the check plot and on the balance of the orchard furnishes an approximate measure of the efficacy of the spraying. Samples for counting are made by the random method, and usually consist of about 1,000 apples of one variety, taken from several trees in the sprayed and unsprayed sections of the orchard, which seem to offer typical and representative conditions. The counts are not made by the owners, but all data of this kind are taken by persons directly in the employ of the department.

"The orchards are of varying size and mostly small. Usually what is known as the 'Purdue plot' is only a fraction of the whole orchard; sometimes it consists of only a few trees. The treatment followed on the Purdue plot is usually practiced also on the rest of the orchard, but the owner's obligation to exactness in record keeping is confined to the restricted area. It should be borne in mind, therefore, that in several cases where records are given for a few trees, those records are only an index of what took place in the remaining portion of the orchard."

The speaker then exhibited charts showing the effects of treatment, according to the instructions of the department in the Worthington demonstration orchard in southern Indiana. This orchard was 18 years old when taken under supervision, and had never been sprayed, pruned or cultivated. The trees were said to have been healthy and vigorous and the location of the orchard was good, but they had never produced a satisfactory crop. There were four sprayings, on the following dates, respectively: April 17, May 2, May 29 and June 25. Home-made lime and sulfur solution and arsenate of lead were used.

Taking the Grimes' Golden trees, of those that were sprayed, 75 percent of the fruit was perfect, while the unsprayed trees showed but 11 percent of perfect fruit. Of the White Pippin trees sprayed, 45 percent of the fruit was perfect; of the unsprayed trees, 1 per cent. And thus the comparisons ran thru a number of varieties, showing largely in favor of the sprayed trees.

In this orchard, the Purdue plot contained 1 3/10 acres. The cost of plowing, pruning, spraying, cultivating, hauling brush, cover crop and harvesting totaled $73.90. With the amount of materials added (lime-sulfur, $3.75; arsenate of lead, $4.20, and cowpeas for cover crop, $5,50), the total cost was $87.35.

The yield of apples on this plot was 530 bushels; worth, at 75 cents per bushel, $397.50. Deducting cost, as given above, the net profit was $238.57 per acre.

The advantages of spraying, with proper care, cultivation and fertilization, were very apparent in the other orchards treated. Statistics of each orchard were given by Professor Woodbury, which, summarized, are as follows:

At Guilford, there were 140 trees in the Purdue plot. There was a light crop, 229 bushels, worth $225.95. The cost of production was $104.05; profit, $121.90.

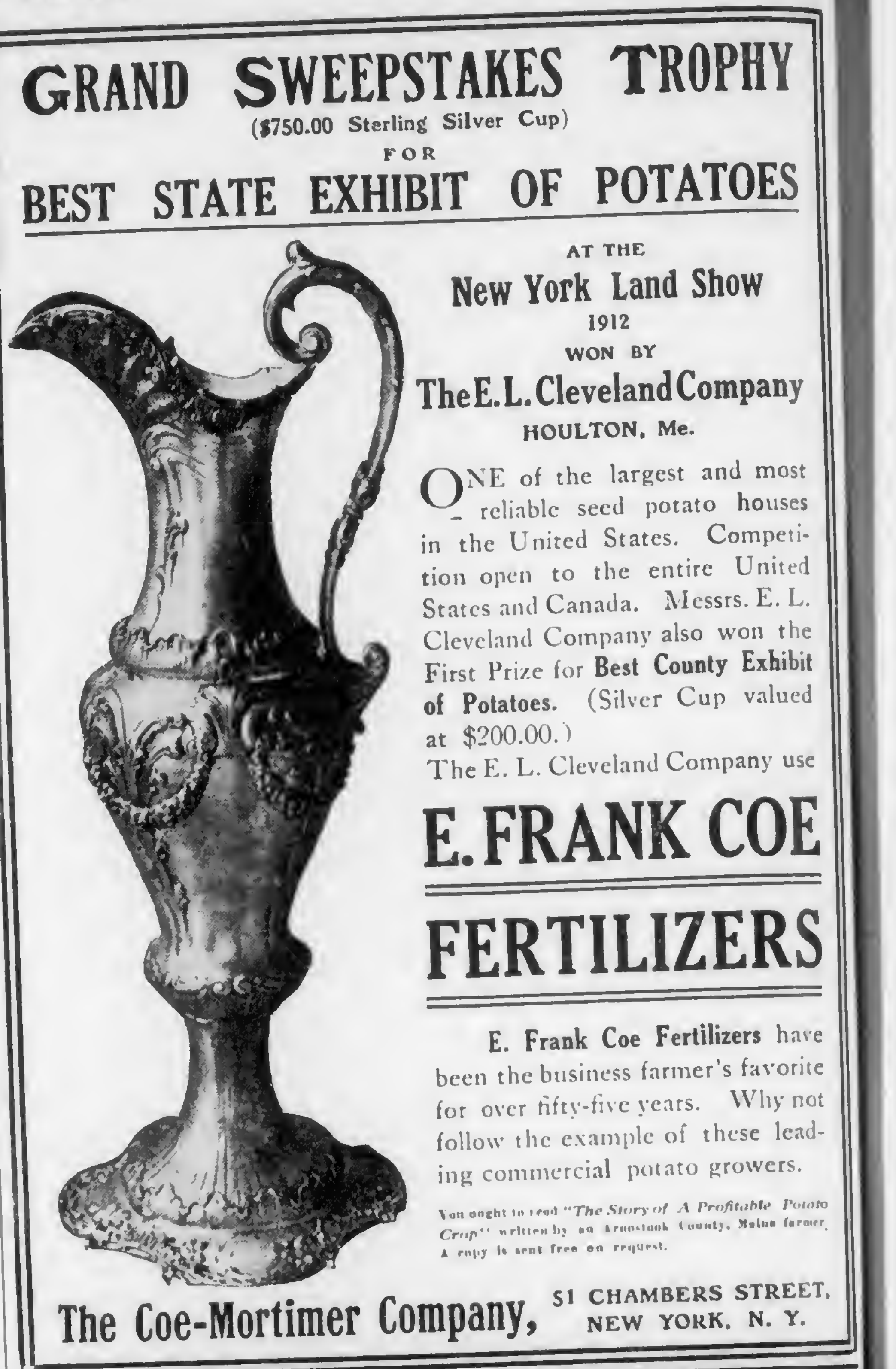
At Fort Wayne, the plot was two acres. There were 65 trees in the cared-for portion, and 15 trees in the uncared for check. The crop was 425 bushels, worth $1 per bushel. The production cost was $67.95, leaving a profit of $357.05.

At Logansport there were 132 trees in the sprayed area. The expenses were $148.74, which included $52 for fertilizers. The yield was 720 bushels of apples, worth $1 per bushel. The profit was $571.75, from an investment of less than $150.

At Seymour the Purdue plot measured 35 acres. It cost $1,047.48 to grow and harvest the crop, including an extra heavy renewal expense, which does not occur every year. There were 59 barrels of culls, mostly good in quality, but undersize, which sold at 75 cents per bushel. The bulk of the crop, consisting of 919 barrels, was stored. The total yield was one-half a crop, worth $3,800. The net profit, on this light crop, was $2,752.50, or $81.00 per acre. On 17 acres, which bore better than the rest of the orchard, there was a net profit of $152 per acre.

Taking the foregoing six orchards, and adding the expenses of each, the average cost of caring for an acre of bearing apple trees was $37.99, and the cost per tree, 80 cents. This includes all labor and materials. The orchards pruned and cultivated, and some were sprayed four times. All were fertilized. The harvesting of the crop and numerous incidental features were included in the expenses.

In the fall of 1909, two years before the Woodbury experiments, Dr. H. A. Surface, State Zoologist of Pennsylvania, evolved his "Model Orchard" plan, now under the supervision of the members of his force of orchard inspectors. It is conducted somewhat under the methods explained above. More than 1,500 orchards are now embraced in the plan, every county in the state furnishing a number.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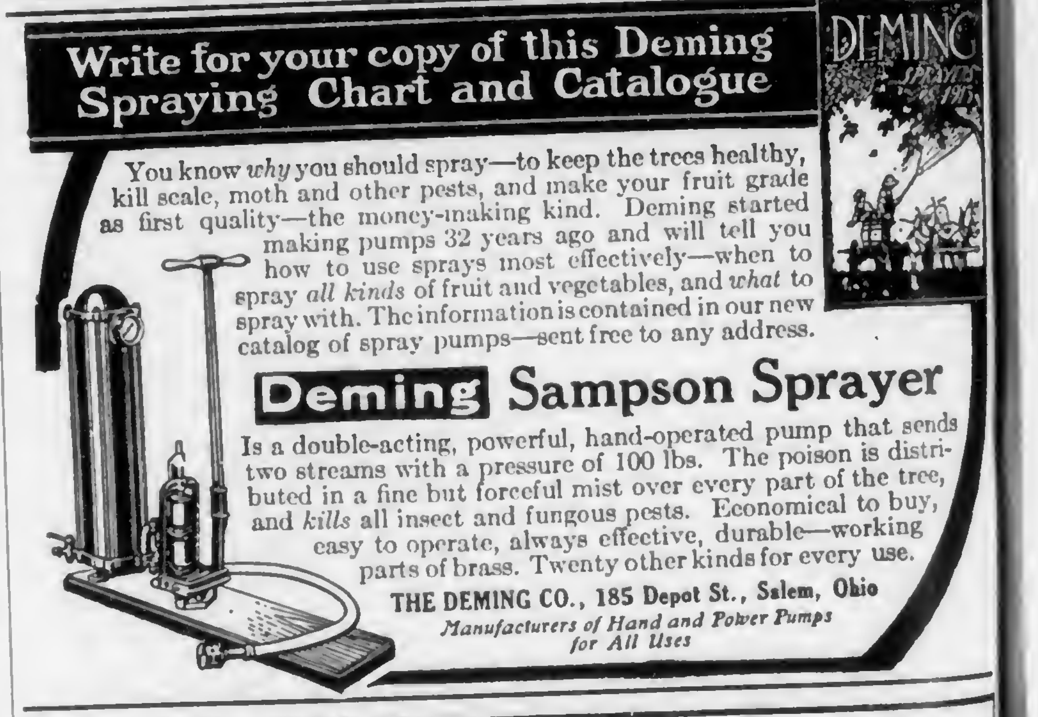
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Is a double-acting, powerful, hand-operated pump that sends two streams with a pressure of 100 lbs. The poison is distributed in a fine but forceful mist over every part of the tree, and *kills* all insect and fungous pests. Economical to buy, easy to operate, always effective, durable—working parts of brass. Twenty other kinds for every use.

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Most economical sprayers on the market. Made in different styles and sizes, from 1 to 1½ h.p., with or without trucks. Designed so that engine can be easily detached from sprayer and used for any kind of work, like pumping water, sawing wood, running separator, etc.

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NO WORMS. Pyrox kills all leaf-eating insects, codling moth, canker worm and kindred pests.

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CLOVER, Timothy, Alsike, Alfalfa and all kinds of Pure Field Seeds direct from producer to consumer; free from noxious weeds. Ask for samples.
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THE PERFECTION SIX ROW SPRAYER
THAT DISTRIBUTES ALL INSECTICIDES AND FUNGICIDES SIX ROWS AT A PASSAGE, AND
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TIGHT BINDING

The Dairy

USE AND ABUSE OF BABCOCK TEST

The dairymen thruout the world agree that the Babcock test is the only practical means of determining the quantity of butter fat in milk. The system is so simple that a school boy of 10 years ought to understand it. As soon as we get industrial training thoroly introduced in our public schools, and this work is taught by teachers who understand how to inculcate into their pupils "if a thing is worth doing at all it is worth doing well," we will not find dairymen keeping cows that produce only 160 pounds of butter per year, which is the average production at the present time. Men who are keeping this kind of cows, and there must be many or there would not be an average of this kind, are the ones that can hardly eke out a living. If my experience as a dairyman has taught me anything, it has been that it does not pay to feed a cow that will not produce at least 300 pounds of butter in one year at maturity, or at the age of five or six years. And if the Babcock test is used with care, we can easily keep a tab on each individual and determine if she is a boarder that pays her bills in advance or a few months in arrears, so that at the end of the year she is so far behind that it is impossible for her to pay up.

One time I heard a dairyman say that he had as good a cow as there was in the United States. He had just gotten a Babcock tester, made a composite test of four days and weighed the milk at each milking. The cow gave 45 pounds of milk per day which tested 8 percent butter fat, making, with 16 percent overrun, 4.17 lbs. of butter per day. I told this man that "I did not doubt his word, but was afraid that he was not careful enough in taking the sample." He then said that "after each milking he took a sample off of the top of the milk with a teaspoon." I asked him if he did not pour the milk from one pail to another, and he answered "that was not necessary, because he took the sample as soon as he was thru milking." Now, right here is where he made the first mistake, and probably the only one. And this is the great mistake that inexperienced dairymen make. After showing the man the proper way of taking the sample he found that his cow tested only 5.5 percent. Still she is a good cow, but instead of making 4.17 pounds, she made only 2.86 pounds of butter per day.

The best way to determine the amount of butter is to weigh the milk each milking every day in the year that the cows give milk. I know that many good dairymen argue that it is as satisfactory to weigh the milk for four consecutive days; that labor is too expensive and will not pay for the extra time, and so on. But I think those that have tried it out have found, and I know from experience, that most milkers will take a little more interest in their milking and try to make their cows out-do the other fellow's, and the weighing and recording the figures will not consume over one-half minute to each cow. This gives us a record that shows up the individual, and we do not have the best or the worst four days of the month. If a cow is fed and handled properly, a four days' consecutive composite test is quite satisfactory. I use the word quite, because no matter how well a cow is cared for, there will be a slight variation.

As soon as the milk is drawn it should be poured from one pail to another. The fat globules are constantly working to the top, and no matter how fast the cow is milked, the top will be somewhat richer than the rest of the milk. I find that a teaspoon is the most practical to take the sample from the pail to the jar.

In selecting a Babcock tester, be sure that you buy it from a responsible manufacturer, so that the test bottles will be properly gauged for accuracy, and that you are getting one that will have a speed of at least 1,000 revolutions per minute. A speed of less than this will not, as a rule, separate the solids that have been burned up by the acid from the fat. Before taking the sample from the jar with the pipette, give it a rotary motion, so that all the fat globules will be thoroly mixed with the milk. Do not shake it, as this introduces air bubbles, and they will be drawn into the pipette and occupy space that ought to be occupied with milk, and thus cheat the cow. On the other hand, if the sample is taken without the rotary motion, too large a proportion of fat globules will be taken into the pipette, and consequently will give the cow too much credit.

Sulphuric acid at the proper strength for testing can be bought at any reliable drug store, and the proper quantity to use is 17.6 cubic centimeters, or the same quantity as of milk. If the fat is charred, the acid is too strong, and should be diluted with water or a smaller portion used. Sometimes we get acid that is too weak and will not burn up all the solids other than fat, and then more will have to be added. Thoroly mix the acid and milk before placing in the machine. If you have an open tester, be sure that the temperature of the room is not below 60 degrees Fahr., and if a closed one put in a quart of boiling water. Run the machine for five minutes, fill up the bottles with boiling hot water, distilled water is best, until the fat comes to the neck. Run one minute more, fill up again with hot water until they can be read easily. Run again for two minutes and read as soon as possible, as the fat settles very rapidly if it comes in contact with the cold air.

There is often a difference between the test of the dairyman and the creamery man. We should take into consideration that we are all human, and if we are not very careful we will abuse the method so that it will work to our interest. But if we will be honest with ourselves and follow the system that I have tried to outline, there will be no trouble in using the Babcock tester.—Leon Van Noy, Bradford Co., Pa.

FINE HOLSTEIN HERD ON PASTURE AT HOME FARM, LEHIGH CO., PA.

THE STOCK-YARDS BULL

How the Tuberculin Test Law Works

In our good state of Pennsylvania we have a general notion that for the sake of human health, and for the greater profit of our herds of cattle, swine and poultry, bovine tuberculosis should be checked as much as possible, held in control as much as possible and be eventually eradicated. Many of us think the latter proposition is entirely within the realm of reason and good business. Indeed, it may be characterized as "big business," as we farmers are accustomed to sinking our individuality in aggregates; and doing so, come to be quite the biggest business in this land.

The learned doctors have long debated the pathological relation of cow tuberculosis to the great white plague. Whether the doctors have finally settled the matter or not, or whether they shall continue to disagree, it is a fact that among us laymen the sentiment is growing that we are afraid of milk from tuberculous cows. To that unfortunate class of people who have their ideas of country ways and practices formed by reading certain city newspapers, the average milk dairy of the country is a place of filth, bad care, darkness. This is absolutely untrue. Some cows are kept under all these bad conditions, and some bad conditions prevail in many dairies; but in the larger producing dairy sections the improvements toward extreme dairy cleanliness and the conservation of the health of the animals has been remarkable in growth during the last few years. I have no doubt in due course of time the dairy that is not kept under reasonable sanitary conditions will be the exception and not the rule. So much for agitation and education.

It is well known, of course, that we have a state law contemplating the eradication of bovine tuberculosis. Our law probably has defects. It misses many of its good intentions. It is often hindered by its enemies in its faithful execution. All laws are broken; but in the main it is working toward the public good, and doing so, deserves the countenance if not the direct help of all good citizens.

One of the provisions of this law, briefly stated, is that no bovine animals for breeding or dairy purposes shall be brought into the state without being subjected to the tuberculin test. It is of this particular aspect of the law that I desire to write. To state my case: I am a breeder of registered dairy animals. I occasionally want to introduce new blood into my herd, say by the purchase of a male. If the particular animal I want happens to be owned in another state, I can get him to my farm only by complying with our state law for testing for tuberculosis. If I were not a believer in the integrity of the tuberculin test, I might resent the provisions and restrictions of the law that does not allow me to buy any animal I please and where I please. Then again, other states will not allow me to ship my salable animals to my customers in their territories without my complying with their laws. Thus the breeder of purebred animals is looked after. He should be regarded as a good citizen, as his breeding operations, while primarily carried on for his own profit, are helping to uplift the general character of the dairy animals of the state—and they need it.

How about my neighbors, who are not breeding registered stock? They are not raising calves. They are producing calves for veal and do not want dairy bred stock. They want more beef, so they buy some roans or reds for bulls to sire the calves. These are all bred out of the state, and are brought in by the carload and know nothing of the tuberculin test. In our city of Lancaster we have the largest eastern cattle market, to which thousands of cars of cattle come each year. Most of these cattle are steers for feeding. But mixed in with these are many cars of bulls and heifers, some of the latter pregnant, some unbred. These bulls and heifers are of all breeds and crosses. If they are sold to our local dealers or farmers for breeding or dairy purposes, they are subject—if not subjected—to the tuberculin test. They are never sold or bought as breeders. They are sold "over the scales," and go forth as "stockers," and most of the heifers finally become countrified into cows for the mixed dairies, and the bulls for sires to head the herds that produce veal calves.

I buy one purebred bull and I must have him tested. A thousand of my Lancaster County neighbors buy nondescript bulls from the stock yards, and I am sure I am safe in saying that not one of the thousand is tested. I am not complaining in my case, but I am objecting to the laxity in their thousand cases. I am surrounded by good neighbors, who are all keeping cows, and with two or three exceptions, they are all using stock-yard bulls. In most cases these bulls are pastured with the cows, and it is an easy matter for the untested and perhaps tuberculous stock-yard bull of my neighbors to lick my cows in a friendly, neighborly way, just over the fence. Shall all the testing and the care that I may use to safeguard the animals of my herd defend them against the contamination of the $25 scrub that has beat the law over the fence?

This law is evidently being openly violated. Who is doing it, the farmer or the dealer? The law is a good one in its observance but not its breach.—W. F. McSparran, Lancaster Co., Pa.

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UNADILLA SILO CO., Box P. Unadilla, N.Y.

DAIRY CATTLE

BUTTER BRED BULLS,

or bread and butter bulls, if you prefer—Registered Jerseys of course. One 18 months old; one 5 months old and one a calf. All nice, all good, all right in price.

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HOLSTEIN BULL,

Artis Pontiac Segis Veeman born Mar. 28, 1912. Sire: King Pontiac Artis, best bred son of King of the Pontiacs his dam 1,076.9 lbs. butter in a year Dam: a daughter of King Segis Pontiac, his dam 1,271.6 lbs. butter in a year. This bull is backed by official records of the highest order and bound to bring favorable results. Price $150.

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AYRSHIRES—We have for sale young Ayrshire bulls, ranging in age from one month to two years old from some of our choicest A. R. cows. All official records. Send for list. SOUTH FARM, Willoughby, Ohio.

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60 very high grade Holsteins that give 40 to 60 lbs. of milk a day. 25 Registered Holstein Cows, Reg. Bulls and Heifer Calves. Grade Heifer Calves 7-8 Holstein blood, $10 ea. Reagan Bros., Tully, N. Y.

Dairy Shorthorns. Good young Reds and Roan bulls, for sale. Registered stock at right prices. GEO. L. MARVIN - - Andover, Ohio

HOLSTEIN BULL CALVES for Sale. Sired by Son of King of Pontiacs whose dam and granddam are daughters of Hengerveld De Kol. Average butter both dams, 26.68 lbs. 7 days. MRS. J. F. BRANDS, Brookview, N. Y.

Holstein Friesian Cattle. Royal breeding. Get A. R. O. bull calves. Write. HOME FARM, CENTER VALLEY, PA.

REGISTERED RED POLLED BULLS ready for service. Prices reasonable Oxford-Down ewes bred. O. H. Swogger & Son, Mercer, Pa

GUERNSEYS—The high quality butter cow. Bargains in bulls. CHESHIRES—The hustling high quality hog. Fred W. Card, Sylvania, Pa.

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makes this heavy job fun for the boy. Curves and switches take the carrier to any part of the barn. The cost is small. It's a money making investment in any size stable. Send for Catalogs. Ask your dealer about the LOUDEN CARRIER.

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NEW YORK DAIRY CONFERENCE

The so-called "conference of Governors' delegates" for consideration of dairy legislation, met at the Academy of Medicine, New York City, recently. It was composed of delegates appointed by the governors of nine states—New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania and Maryland, and two from the national government. The purpose of the convention was to pass judgment upon the provisions of a bill framed by the New York milk committee for the purpose of regulating the milk supply, the idea being that approval would result in similar bills in the states represented in the conference, and to that extent achieve uniform milk legislation.

Serious differences occurred on the very first proposition, which was stated in the form of the question, "Should the inspection of dairy farms be a function of State authorities rather than of city authorities?" The possible advantages of state inspection were freely admitted by all the speakers. The uniformity in regulations thus to be obtained was held to be desirable. It was declared that the expensive and aggravating duplication in inspections could thus be obviated Nevertheless, there was general agreement that the only efficient dairy inspection now evident was that of the municipalities, and there was no disposition to relinquish such municipal inspection.

Perhaps the concensus of opinion was stated in a communication from the Medical Milk Commission of New York in these words: "The commission realizes that this (state inspection) would be an ideal way, if it could be properly carried out. There would be no conflict of authority, and farmers refused by one community could not ship their milk to another. It should be remembered, however, that this is primarily a question of the health of the consumer, and the city authorities have in the past been able to secure funds for the cost of controlling the milk supply much more readily than those of the states. The communities should always have the right, therefore, to supplement the state control when necessary to safeguard the health of the people."

The final action of the conference was to the effect that dairy inspection "should be a state function to co-operate with the inspection work of local boards of health, and so bring about more uniform methods." When asked to consider "what should be the scope of such state control," the conference decided that there should be no state "control," and substituted therefor the word "supervision." It was agreed that the state might properly see to the grading and registration of dairies and shipping stations, the medical inspection of dairy employes, the veterinary inspection of cattle, the sanitary inspection of buildings, water supply, drainage, etc., and laboratory tests of milk collected from dairies and shipping stations.

The second hard-fought discussion in the meeting was over the question, "If the inspection of dairy farms should be a function of the state, where should the state control be centralized?" The New York milk committee had suggested a "State Milk Board," of which the state commissioner of health should be chairman and the state commissioner of agriculture should be vice-chairman. It was to be composed of the assistant attorney-general, dean of the state dairy school, "a sanitarian learned in bacteriology and medicine," and paid employes selected from the state departments of health and agriculture. There was, in addition, "a secretary to the board having knowledge of sanitation and dairying," and an assistant secretary and office assistant. This plan met with scant favor from the conference, and was finally rejected by a decisive vote, the convention declaring in favor of putting state milk supervision in the state board of agriculture.

There was little or no dissent from the proposition that dairy herds should be graded. The basis for grading suggested by the committee was also endorsed, to wit: Class A, herds tuberculin tested and physically tested. Class B, herds not tuberculin tested, but physically perfect. Class C, herds not tuberculin tested and not physically examined. The suggestion that dairies should be scored by the United States Government score cards and divided into three classes, both as to equipment and methods, met with entire favor.

The conference agreed with the committee as to the advantage of classifying milk "on the basis of bacterial count and sanitary condition." It rejected the specific classification into four grades which the committee suggested, however, and during the debate on the question, made it quite clear that the individual state or municipality should be left to adopt its own classification.

The question of federal supervision over dairies and stations making interstate shipments of milk aroused extended discussion, which manifested a very sharp divergence in sentiment. After many motions, amendments thereto, and substitutes therefor, it was finally decided to leave the whole matter in abeyance.

The New Jersey delegates to the conference were Franklin Dye, A. A. Cortelyou and Charles McNabb. Chief Food and Drug Inspector Samuel G. Sharmell was an interested spectator, and several other prominent dairymen from New Jersey and Pennsylvania followed the proceedings carefully.—D. T. H.

DOES IT PAY TO SHRED STOVER?

In Pennsylvania Farmer of January 11th the question is raised whether it pays to shred fodder. Many years ago I used to run the corn fodder thru a threshing machine. This was before shredders came in use. Later I ran it thru a shredder and run the stover in a mow next to a straw mow. I first put a layer of straw in the bottom of the mow, then a layer of stover, and alternated them, until corn was all shredded. I kept one man in the mow to keep the stover and straw evenly spread. We trampled it as little as could be and still get the stuff in the mow. The stover kept very nicely and made very good dry fodder. At that time I thought it the only right way of caring for the corn stover. But since then I have built two 14x28-foot silos, and I find there is no way of caring for the corn crop like putting it in the silo.

The way we do is to wait until the corn is well glazed. Then we drive a team along the edge of the field with a wagon and large wagon box. We have our men take a crate or basket each and take a row, break off the largest and best ears and empty in the wagon box. As soon as one round of the field is made we start the corn binder and let the men commence a new bout. In this second bout it is necessary to carry the corn a little farther, but every time the corn binder makes a trip it puts the wagon a row closer. Our crew will take the corn off as fast as the corn can be cut with the binder, so it simply takes the ensilage crew from one to two days longer to fill the silos and get the corn husked and put in the crib. Two men besides the teamsters can husk the corn as fast as gathered, if no barn floor is handy to put the corn on. We put ours on the barn floor and husk it out evenings. Then we are able to run the husks thru the cutter and clean up the whole job in a few days.

We are now using silage made from corn handled as described, and nicer and better silage is hard to find. We picked from three acres 225 bushels of ears of as nice corn as any man would care to have, in less than one day, using six men and one team. I have never figured just what it cost me per bushel, but I am satisfied that it was the cheapest way I ever handled that much field corn, besides getting the stover where it belonged and having it in the most palatable form for stock feeding.—Joseph E. Fischler, Tioga Co., Pa.

Agricultural Tour.—The third annual agricultural tour of Europe for observation of European agricultural methods and to attend the International Congress of Agriculture, Ghent, Belgium, June 9-13, 1913, is now being arranged. For full information address Bureau of University Travel, 31 Trinity Place, Boston, Mass.

CAPONS

There are two good reasons why every farmer should caponize his fowls; there is an increase in weight by so doing; and the price per pound is materially increased. The task is not a hard nor difficult one, a little experience being all that is necessary. Farmers' Bulletin 452, of the Department at Washington, gives full and detailed instructions, together with illustrations, showing where incisions should be made and the proper use of the tools.

Carrying the Milk in a Leaky Pail

You wouldn't think of letting your profits get away from you like that, but how about the loss of almost as much milk every day through feeding your cows a cheap, low-producing ration? You remember the story of Yeksa-Sunbeam—how her first owner failed to give her the opportunity to do her best and sold her at the price of an ordinary cow. Then you know how her buyer through proper care and feeding made her a world's record-breaker worth $5,000. The first owner was carrying milk in a leaky pail and didn't know it. He lost the best part of his profits—the extra quarts that were left after paying for the hay, feed and labor.

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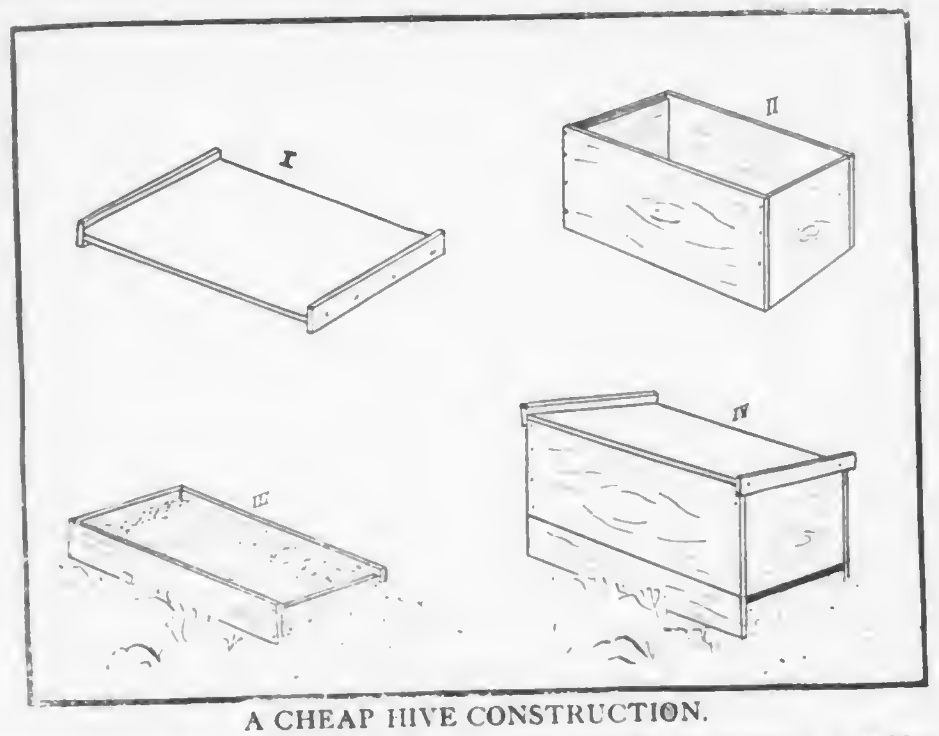

A CHEAP HIVE CONSTRUCTION.

These Hives May be Made at Home and Serve Every Purpose of a More Elaborate One.

The beekeeping fever struck me in the spring of 1908, when my brother, who had heard a lecture or two on beekeeping at the short course in agriculture at Rutgers College, told me that there was money to be made in keeping bees in modern hives, and that the Italian bee was so gentle that it could be handled with but very little danger of getting stung. From that time forth all of the farm papers were closely scanned for articles on bees. I sent to Washington for all of the bulletins on bees.

While my bee fever was at its hight my uncle, who kept three or four colonies of bees in box hives, gave me one. Before swarming time came I bought a modern hive, with an upper story, or "super," as they are called, for the storage of the surplus honey. I had two swarms that year; one was hived in the new modern hive and the other in a box hive. I found hiving the swarms not at all difficult or dangerous, for they clustered on the lower limbs of near-by trees and could be shaken right into the hives. At swarming time bees are not inclined to sting, because before leaving the hive they fill themselves so full of honey that it is almost impossible for them to sting. In the fall of that first year I got 24 pounds of honey, each pound stored in a separate box, from the modern hive; none from the swarm that was hived in the box hive, and about 10 pounds, which was all stored in one box, from the original colony in the box hive. We ate the honey that was stored in one big box, and sold the other for enough to cover the cost of the hive.

The following winter I took my brother into partnership, for he was almost as enthusiastic about bees as I was, and could give good advice as well as much help. We bought, in the flat, and put together five more new hives with supers. The next summer we had enough swarms to fill all of these hives, and found much use for a smoker, which we had also bought. I was very foolish to try to keep bees the first year without a smoker, for keeping bees without one is like managing an unruly horse without a whip. By simply puffing a little smoke on the bees as we lifted the cover of a hive, we could so subdue them as to be able to take out the frames with the bees clinging to them, hunt up the queen, and see what progress they were making in building comb and storing honey. If they needed it, we could give them more room for the storage of honey and assist them in many other ways.

As, up to this time, all our bees were the black, or German bee, we wanted to try the Italian variety, so we sent for an Italian queen. She came by mail, and after killing one of our black queens, we introduced her according to the directions given on the cage in which she came. In a few weeks the colony was composed entirely of Italian bees, for the life of a worker is only about six weeks in the summer. We did not get this queen early enough in the season to compare the work of her bees with the blacks, but we found them much less inclined to sting.

The next winter we got more hives, but as we did not have swarms enough to fill them, we bought some box hives at $1 apiece. We then transferred the bees from these into our frame hives. Transferring is a very simple process, and furnishes a very good way for the farmer, who lives in a locality where bees are only kept in box hives, to get the bees into improved hives. We also bought more Italian queens that year, for the colony of Italians that we had were storing very much more honey than the blacks. We got considerable honey, and had a chance to repay our uncle, for his bees did not store enough for use on his own table.

This brings the account up to last year, which was the most successful year we have had. In addition to a good supply of hives, we bought an extractor so that we could produce extracted honey as well as comb. We started in last spring with 12 colonies, two of which were still in box hives, and by fall they had increased to 29, all of which are now in frame hives and in good condition. We raised some queens ourselves, to replace the black ones, and found it very fascinating work. Our entire crop of honey last year was somewhat over 1,500 pounds. One colony alone produced over 100 pounds, and several averaged nearly as high. But not withstanding the fact that we secured such a large crop of honey, our uncle's bees, which are but half a mile from ours, only secured enough to keep themselves over winter. So no one should be discouraged from starting with bees simply because his box-hive neighbor tells him that there is no honey for the bees to gather in his locality.

Now, as to the profit. We have never made more than enough from the sale of honey to buy empty hives and other supplies, but when we consider that we have 29 hives, all filled with bees, together with supers, an extractor, and other supplies, all of which are good for many years, we do not figure that we have come out so badly on the credit side of the account, to say nothing of the increase in the yield of fruits and vegetables which the bees have caused by fertilizing the blossoms. Then, too, having an interest in those bees has helped me to see pleasure in farm life, where if I hadn't had them to think about many days would have been pure drudgery and I might have decided that the farm was no place for a young man.—Farmer's Son.

THE WHITE GUINEA

There are two distinct breeds of the guinea, the pearl and the white guinea. They are about the same size and their general habits are very much the same, except that the white guinea seems to be more perfectly domesticated than the pearl and seems tamer.

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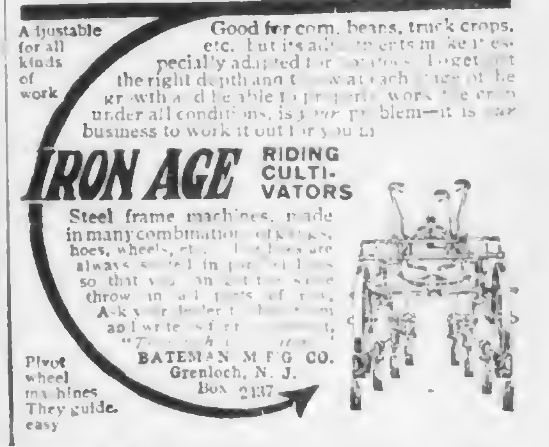

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ESTABLISHED 1880 PUBLISHED WEEKLY

Established 1880. Published Every Saturday.

Entered as second-class matter at the postoffice at Philadelphia, Penna.

The Lawrence Publishing Co., Proprietors
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Chicago, Ill., 600 First Nat'l Bank Building.
Detroit, Mich., 39-45 Congress St., W.

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One Year	52	copies to one person	$0.50
Two Years	104	" " " "	$1.00
Three Years	156	" " " "	$1.25
Five Years	260	" " " "	$2.00

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Philadelphia, Pa., February 22, 1913.

HOW DO YOU READ ADVERTISEMENTS?

Do you just glance at them, passing them over without serious thought of their importance to you? We hope that you do not—still it will do no harm for us to say that for your own interest you should read the advertisements in Pennsylvania Farmer just as carefully as you read our other columns. There is often a connection between the two. For instance, our reading columns are designed to aid successful farming, to encourage new ideas that may help our readers to farm with greater economy. Often it is necessary for you to know where certain products or machinery can be obtained, in order that you may adopt the suggestions you read, and from the large number of requests we get for such information, we know that our readers are vitally interested in all new ideas for increasing their incomes. So we would urge upon you that you read the advertisements as a guide; absorb the stories of those whose announcements we carry. You are bound to be benefited from such reading, even tho you never purchase anything offered you, simply because the advertising is news—news that is of vital importance to every progressive farmer. Do not just glance at, but absorb the advertisements, and you will be the gainer.

LICENSING COMMISSION MEN

A very important agricultural bill now before the Pennsylvania legislature is one providing for the licensing and bonding of agricultural commission men. The bill, in brief, provides as follows: Licenses issued for one year by the Secretary of Agriculture upon payment of a fee of $10 by the applicant; applicants must furnish bond in the sum of $5,000 conditioned for payment due shippers; any shipper who does not receive payment for products within 30 days, or within time specified in selling contract, may enter suit on the bond of such licensee. A penalty of $1,000 is fixed for operation without such license. The purpose of this bill is to place the commission business in the hands of responsible men, a reform which is universally conceded to be at the bottom of more economical marketing. As such, it should appeal to all honest commission men as well as to farm shippers. It would effectually bar out the irresponsible men who take advantage of the peculiar conditions in commission selling and who feel no obligation to producer or consumer. Milk dealers and produce dealers who develop a large number of accounts, receive and place as much produce as possible, make collections and then disappear, would be checked by such a law. In no other business would such laxity of supervision be permitted, but just such cases develop in the commission business every year. The pending bill should be passed to meet this very condition, but it should also go further and compel commission men to make an accounting of the dispositon that is made of the products handled. At present the shipper takes what the dealer chooses to send him, and has no recourse. The dealer may claim poor quality, damaged goods or a temporary slump in the market, and the grower must take this explanation, having no way of tracing his shipment beyond the doors of the dealer's receiving station. State laws can compel banks and public service corporations to keep their books open to state inspection. Why can they not do the same with the books of the middlemen who serve the public in the handling of the food supply? Every commission man should be compelled to keep records of every sale, so that any shipment under protest might be traced to its destination. Minnesota has such a law, and it is neither impractical nor impossible. The commission men alone oppose it, urging the excuse that it would require too much bookkeeping and is entirely impractical. A neighboring state attempted to pass such a law two years ago. The bill was defeated thru the influence of the commission men. A year later one of the dealers who had been most prominent in the fight declared that the greatest objection to the open-book provision was that if the growers were able to trace their products to the final consumers, or to the retailers, the commission men would soon be forced out of business; the grower, having found the consumer, would deal direct in the future, and the commission man would lose the business. Here is the very condition that producers and consumers have been seeking, and which they have not been able to secure because of the laxity or entire lack of legislation. The state owes protection to the honest and necessary middleman, just as it does to all other classes of citizens. But it owes it to its great mass of producers and consumers to prohibit the operation of the dishonest and prevent the operation of the useless dealers, and thus cheapen the cost of food marketing.

HELPING THE FARMERS

Agricultural exploitation has become a popular fad. We have rural progress leagues organized in cities and composed of city people; rural uplift associations, composed of members who know little of actual country conditions except what they read from daily papers and the magazines. These bodies are made up of very good and very serious people, who see in their imagination or in their conception of rural problems a great opportunity for valiant service. They want to help the farmers. Then we have federal, state and county agencies organizing to give aid and instruction to farmers at county, state or federal expense. A close observer of public affairs recently remarked that it is now easier to secure an appropriation for agricultural development than for any other purpose. All of these movements have the one purpose of helping the farmer and solving the supposed problems of the country people. But in none of these do the country people themselves figure prominently. They are, and are supposed to be, the passive patients to whom these various up-lift bodies are to minister. This is not because the average farmer is not fully awake to his needs, or that he does not appreciate and welcome real assistance. But this sudden and overwhelming flood of paternalism has bewildered him, and there seems to be nothing for him to do but sit back and receive the fruits of others' labors. But history does not record a single instance of real and permanent benefit derived in such manner. What farmers need more than anything else is an opportunity to help themselves. A stream can rise no higher than its source, and a community can rise no higher than the ideals of the people in that community. All the rural progress and country uplift movements in the world can push a country community only so far as the people of that community help to push it. The real growth must come from within rather than from without the rural communities. This wholesale exploitation is serving a purpose, and the desires of the rural sections will be hightened thereby, and it is to be hoped that from the mass of agitation and legislation there will come a few actual reforms which will form the basis of real and needed growth. But when these few are developed, it will have been found that much of the present flurry has been just common dust and hot air. There are rural problems, and grave ones; there are rural communities sadly in need of stimulus, and the county and state organizations can help in this development, but the initiative rests with the community and not the outside agencies. There is a place for the county demonstrator in such counties where the farmers, by their own initiative, invite the demonstrator and put real effort into supporting him and profiting by his work. There is need for the state demonstrators when the farmers by their own efforts help secure such demonstrators and regard their services as the result of an investment rather than a gift. There is need and a place for rural uplift and rural progress advice where the farmers are ready to admit that their problems are beyond them, but that they are ambition to profit by outside advice, and ready to act with real effort and real money upon the suggestions given them. Every successful farmers' organization in the past has been developed by the farmers themselves. Every real success in the future must come from the same source. The farmers welcome assistance in the way of competent suggestion and friendly legislation, but to be really effective this effort must lose much of its present paternalism and aim merely at a square deal. With that, the farmers will solve their own problems.

SUFFRAGE METHODS

History and tradition have taught us to concede composure and immobility as two leading characteristics of the English people. The events in the woman suffrage campaign in England indicate that these characteristics are sexual rather than racial. Certainly the leaders in the fight, and it has been an actual fight most of the time, are doing all they can to destroy the nation's reputation for calm and dignified statesmanship. Americans are traditionally bumptious, irascible and impulsive, as compared with their English cousins; but this tradition has been most decidedly reversed in the methods used in suffrage movements in the two countries. The English suffragettes have astonished and disgusted the civilized world with their window-smashing, acid throwing and other forms of violence. They have disregarded the laws of their country which they aspire to honor with their legal support, and have presumed upon their position as the "weaker sex" to protect them from the stern enforcement of the law which punishes disorderly conduct. No band of men in England or any other civilized country could indulge in the violence practiced by these militant suffragettes without being regarded and punished as mere bullies and disorderly disturbers. And these methods appear to meet with the success which they deserve, and no more. From published accounts, the English suffragettes are no nearer their goal than when they started. Contrasted with this condition, the American suffragettes are making admirable progress thru the use of admirable methods. The movement in this country is being conducted with dignity and a serious appeal to the spirit of fair play and equal rights which at once disarm resistance and inspire confidence in the intelligence and efficiency shown. The women of America are demonstrating their fitness to participate in the franchise of the country by using good, sound, common-sense statesmanship and intelligent politics in their campaign for the privilege. They are on the road to success and they deserve to succeed.

PENNSYLVANIA LEGISLATIVE NEWS

Flood of Legislation.—Pennsylvania's legislature is receiving so many bills that it is impossible to make any predictions as to when the session will close or what the output will be. Indications are excellent for enactment of numerous agricultural measures, owing to the fact that all parties appear united in favor of certain objects which have long been urged. A large proportion of the numerous bills introduced are of the class known as freak bills, with numerous regulation measures and some which have been appearing regularly every session for the last 20 years. It is unfortunate that so many bills are being presented as the legislature is committed to a definite program on big things, and will have plenty to do to carry it out.

Agricultural Education.—The movement to establish agricultural, vocational, industrial and household education as a part of the state system took form during the latter part of the week just closed. There are two bills, one establishing the courses in the state educational system, and the other making appropriations to carry out the ideas in the former bill. The first defines vocational education as instruction which tends to lead to profitable employment; industrial education as relating to trades, crafts and manufacturing; agricultural as relating to tillage of soil, forestry and domestic animals, and also defines household management instruction. These courses are to be outlined by the State Board of Education, and the state superintendent of public instruction is to be the executive officer in charge. School districts may establish these courses and the directors may create committees to aid and advisory boards. Provision is made for day, evening and part-time classes, so that people of all ages may profit by the courses, the part-time class being provided for those who are required to work for a living and who desire to perfect their education along the lines provided in the course. The state is to pay two-thirds of the sum spent in such education by each district, but may not give more than $5,000 to any one district. The boards are to make reports of their expenditures for such education by the first of July, and the state will distribute the money thereafter. The appropriations provided are $90,000 each for agricultural and vocational training for two years, $32,000 for household training and $20,000 to pay expenses of pupils in other districts. Various other smaller items make the aggregate of the appropriation about $250,000.

Rural Aid.—In addition to these bills, other measures are contemplated to provide for financial aid for rural school districts which are unable to give the minimum salary to teachers. These acts will provide for a distribution thru the State Department of Instruction on a system to be devised. Estimates are now being made of the money which will be required. It is said that about 30 districts will be aided.

County Aid Projects.—Two bills to provide for aid, not in excess of $1,500 per year, to be given by counties thru county commissioners for furtherance of agriculture, appeared during the week. One recites the work inaugurated by the U. S. Department of Agriculture to co-operate with State College to locate a trained agricultural expert in each county, and provides that not over $1,500 a year may be appropriated for such co-operation. Another bill provides that payments may be made for county instruction and demonstration.

Other Plan Proposed.—The other plan for practical agricultural instruction is proposed as a supplement to the farmers' institutes. The Department of Agriculture has asked for $40,000 for the employment of instructors. The $40,000 is divided equally between the two appropriation years and covers salaries and expenses. A bill is in the appropriation committee for the employment of 10 such experts. The state is also asking for $55,000 for two years' series of farmers' institutes.

Noxious Weeds.—A bill to check the growth of wild mustard, wild carrot, wild onion, horse nettle and Russian thistle has been introduced by Mr. Peachey, Mifflin County. Such legislation has frequently been proposed, but the Peachey bill appears to have the most common-sense arrangement of any. Under its terms any person in charge of land is prohibited from allowing any of the above weeds to go to seed. The occupant of adjoining land may serve notice upon the owner, and in case nothing is done, may serve notice upon constable or supervisors of the township. In case such notice does not result in destruction of the weeds, the township authorities have them cut at a cost not exceeding $2 per day. Supervisors also see that no such weeds are allowed to grow along highways.

Protect Fruit Trees.—Almost the same method of halting spread of fruit tree pests is to be proposed in a bill to be presented.

Rural Lighting Planned.—Two bills designed to facilitate lighting in rural communities are in the house. One authorizes commissioners of townships to contract for lighting of roads, and another authorizes the lighting of state highways by supervisors, who are also given authority to light other roads.

Library Bill.—Rural communities which are establishing libraries at schools, and which desire more reading material than is carried by the state Free Library Commission, will watch with interest the bill to regulate libraries. It provides a method whereby cities, boroughs and townships may make appropriations for libraries.

Oleo Bills.—Two bills affecting the oleomargarine business in the state are now in the hands of the house health and sanitation commission. One allows coloring matter to be used, the other maintains the present prohibition. Both reduce licenses. The bill of Mr. Richards, Allegheny, allows coloring matter to be used in making the product and makes the license scale $1,000 for manufacturers and $500 for wholesalers, as at present, but cuts the license for retailers from $100 to $18; hotels and dining rooms from $50 to $10, and for boarding houses from $10 to $6. The bill of Mr. Young, Philadelphia, retains the provision against coloring matter, and cuts out all licenses, except for manufacturers and wholesalers, which are as at present.—Hamilton, Harrisburg, February 17, 1913.

NEW YORK STATE LETTER

State Fair Bonds.—A bill has been introduced in the legislature to bond the state in a sum not to exceed $2,500,000 for purpose of extending the state fair grounds at Syracuse. The law, if enacted, will be submitted to the people at the general election to be held next fall. There is some talk at Albany about abolishing the state fair commission and substituting therefor a commission to be composed of the commissioner of agriculture, the dean of the state agricultural college and the lieutenant-governor; also a single headed commission has been suggested, but it is doubtful if any change is made this year. At the last meeting of the state fair commission it was decided not to charge exhibitors of machinery and agricultural implements any fees for space occupied on the grounds outside the manufacturers' or other fair buildings.

Delegates to Rome.—Governor Sulzer has appointed the delegates to the International Institute of Agriculture at Rome, among whom are Hon. E. B. Norris, of Sodus, N. Y., a past master of the state grange; Henry Morganthau, Jr., of Cornell College of Agriculture, and J. W. Sanbury, of Busti, N. Y. After the congress they will tour the continent for first-hand information on co-operation and intensive farming.

Corn Show.—There were 440 schools represented in the corn exhibit at the Farmers' Week meetings at Ithaca, this week; they are located in 45 counties and represent the interest of approximately 6,000 children. The prize ears of corn were selected from the school corn shows held on December 6, 1912.

Commission Merchants Oppose Bill.—The largest attendance at any hearing this winter before any committee of the legislature was that a few days ago when the bill to license commission merchants was being discussed. It was fiercely opposed by commission men, mostly from New York City, and quite as strenuously defended by farmers and shippers. There were fully 400 people at the hearing. After considerable talk the committee decided to eliminate the bonding feature of the bill, and also that relating to the requirement imposed on the commission men to furnish to shippers the names of those to whom they sell goods. But the licensing feature will be retained at all hazards. The main object of the measure is to get rid of the dishonest commission man, and this object should commend itself as much to the honest commission man as to the shipper.

More Sulzer Bills.—If Governor Sulzer succeeds in getting his economy ideas adopted by the legislature, he will be entitled to the thanks of all taxpayers. On February 13 five bills were introduced in the assembly which, if enacted, would save the state millions of dollars annually. One provides for a new department whose chief shall receive $12,000 a year, which shall be known as the department of efficiency and economy. Another bill provides for a state board of estimate, which will look into the financial operations of the state government. The third bill creates a board of contract and supply, and authorizes the comptroller to audit all bills contracted thru purchase. These bills are evidently along the right line.

Fruit Growers to Meet.—The annual meeting of the state fruit growers' association for the eastern part of the state will be held in Poughkeepsie, on February 20 and 21. A good program has been formulated, and there will be a large attendance of eastern fruit growers.

Fruit Not Injured.—It seems to be the general opinion of fruit growers that the mild weather of January did not cause any injury to fruit buds. Peach buds would be injured if any were, but examination of trees does not reveal any injury to them of importance.—New Yorker.

THE FREE SEED FARCE

Announcement was recently made that the government had placed an order with a Rochester, N. Y., firm for $10,000 worth of beans to be grown the coming season for the annual free seed distribution. But this is only a drop in the bucket. It has been announced that about 1,200,000 pounds of vegetable and 50,000 pounds of flower seed will be required this year. Dividing these seeds into varieties we find that last year there were distributed over 325,000 pounds of corn, 174,000 pounds of peas, 132,000 pounds of radish, 73,000 pounds of lettuce, from 2 to 10 tons of 16 other kinds of vegetable seeds and 17,000 pounds of sweet peas, 11,000 pounds of nasturtium seeds and quantities of other varieties, making in all a grand total of nearly 500 tons, or enough to fill 28 freight cars. There were 63,364,555 packets thus distributed by Congressmen, without cost to themselves, as gifts to their constituents.

There might be less objection to a Congressman making presents to his constituents to curry favor with them and to keep them good natured about election time, providing he foots the bills for the presents. But in this case the government does the footing and it amounts to a pretty large total. The system of sending out seeds in this way was instituted years ago, and was for the ostensible purpose of distributing new varieties of seeds among farmers for purposes of experimentation. Soon it was discovered that mighty little experimentation was done with any considerable benefit to the farmers of the nation. But the custom was established and many farmers enjoyed it, and so it was not only continued but enlarged upon, until it has for many years been nothing less than a wholesale distribution of gratuities by Congressmen for the purposes above indicated.

We wonder whether, under the coming new regime at Washington, more seeds will be required "for the purpose of experimentation among farmers" or less. Probably, more rather than less. But the question is, who is going to foot the bill? It seems to us that here would be a grand opportunity for Congress, or rather for Congressmen, to show an altruistic spirit and pay for their own presents, or, better still, abolish the custom altogether.—New Yorker.

GREENVILLE FARMERS' WEEK

The Pennsalvania State College will hold a Farmers' Week at Greenville, Pa., March 3d to 7th, inclusive. This meeting is being held for the benefit of the people of western Pennsylvania. It is not intended to be local in character, but it is hoped that there will be a large attendance from all the surrounding counties. It will afford an opportunity for many hundreds of practical farmers to spend several days with the scientists of their school of agriculture and experiment station. Subjects relating to all branches of agriculture and of praticular interest to western Pennsylvania will be discussed. These include soil drainage, lime, fertility, potatoes, alfalfa, corn improvement, plant breeding, insect enemies of farm crops and their control, orchard spraying and fertilization, and the growing of market garden crops, swine, horses, beef cattle, sheep, etc. This is an opportunity of which the farmers of the section should avail themselves.

Live stock will be made a prominent feature of the week. The animals used for demonstration will be taken from the college. A beef animal, after judging on the hoof, will be slaughtered and a carcass demonstration given.

INSTITUTES FOR THE WEEK

February 24-25, at Bustleton, Philadelphia Co., R. P. Kester, S. W. Funk and C. C. Hulsart. At Newry, Blair Co., J. T. Campbell, F. W. Card and M. H. McCallum. At Cross Creek, Washington Co., F. Menges, F. H. Fassett, Dr. M. E. Conard and E. S. Fowler. At Clara, Potter Co., L. W. Lighty, J. A. Runk and W. T. Wittman. At Coryville, McKean Co., the same speakers will be present. At Topton, Berks Co., D. H. Watts, C. T. Cornman, Mrs. E. E. Smith and J. A. Herr.

February 26-27, at Media, Delaware Co., R. P. Kester, S. W. Funk and C. C. Hulsart. At Geesytown, Blair Co., J. T. Campbell, F. W. Card and M. H. McCallum. At Hickory, Washington Co., F. Menges, F. H. Fassett, Dr. M. E. Conard and E. S. Fowler. At Port Allegheny, McKean Co., L. W. Lighty, J. A. Runk and E. L. Phillips. At Jacksonwald, Berks Co., D. H. Watts, W. T. Wittman, Mrs. E. E. Smith and J. A. Herr.

February 28-March 1, at Concordville, Delaware Co., R. P. Kester, S. W. Funk and C. C. Hulsart. At Tyrone, Blair Co., J. T. Campbell, F. W. Card and M. H. McCallum. At Centerville, Washington Co., F. Monges, F. H. Fassett, Dr. M. E. Conard and E. S. Fowler. At Kane, McKean Co., L. W. Lighty, J. A. Runk and E. L. Phillips. At Geigertown, Berks Co., D. H. Watts, W. T. Wittman, Mrs. E. E. Smith and J. A. Herr.

CORN DAY AT STATE COLLEGE

A Corn Day will be held at Pennsylvania State College, February 28. One of the important features will be a display of the corn shown by the state at the recent National Corn Show. This exhibit consists of about 200 ten-ear lots, including the sweepstake exhibit of flint corn for the United States and the champion 10-ear lot of Dent corn for the Middle Atlantic and New England States. A program has been arranged including addresses on Care and Testing of Seed Corn, Prof. C. E. Noll; More Corn Per Acre, Prof. F. D. Gardner; Corn for Silage, H. P. Davis; Selection of Seed Corn, Prof. W. H. Darst; Boys' Corn Clubs, Prof. M. S. McDowell. Farmers are invited to bring 5-ear lots of their corn to add to the exhibit. For further information, address Prof. M. S. McDowell, State College, Pa.

GASOLINE ENGINE

The Gasoline Engine on the Farm is the title of a new book by Xena W. Putnam. Bound in cloth; 5¼x7½ inches; 527 pages. Illustrated with 179 selected engravings. Published by The Norman W. Henley Publishing Co., New York. Price, $2.50.

This is a complete and detailed discussion of the modern gasoline and kerosene motor and its many applications in farm work. It discusses the points to be considered in selecting an engine for farm work, its proper installation, how to operate, troubles and how to avoid and remedy them. This discussion, while necessarily technical, is worded in simple language which anyone can follow and understand. The illustrations serve to make the meaning plain in all cases, and render the book a reliable guide to engine operation. This discussion is followed by chapters on care and management of heavy tractors in plowing, harrowing, road making, etc. Perhaps its greatest usefulness is its discussion of the application of motor power to the smaller, every-day work of the farm, barns and household. Directions are given, together with illustrations, on use of motors in wood cutting, water supply for farm buildings and irrigation, heavy lifting, churning, washing, milking, etc. It is just the book that has been needed to direct intelligent handling of motors in present uses, and introduce the more general use of motor power in all kinds of farm work. The author, Mr. Putnam, is a practical and successful farmer, as well as a finished machinist, and he writes from long practical experience in operating power on the farm. Our readers will remember his occasional practical articles on farm mechanics in Pennsylvania Farmer, and they will be interested in this new book.

NOTES AND BULLETINS

Advanced Register Guernseys.—The American Guernsey Cattle Club has just completed and published a very complete list of advanced register sires and great producing dams. It gives the number of progeny and the record in pounds of milk and butter fat each cow has produced. Every bull that has two or more progeny, and each cow that has one in the advanced register is recorded. The list is corrected to November 1, 1912, and is to be kept up to date for the benefit of all breeders. Copies can be obtained by writing to the office of the club at Peterboro, N. H.

Cornell Potato Show.—The Cornell Potato Show, held in connection with Farmers' Week, was a great success. There was a total of 160 entries. N. L. Wolcott, McLean, N. Y., won first on extra early varieties, with score of 88; J. N. Jones, Pattersonville, N. Y., first on medium early, score, 86; Clark S. Stanley, Marathon, N. Y., first on late potatoes, score, 87; M. J. Rosenkrans, Wayland, N. Y., first on new or unknown varieties, score, 85; Willis Y. Welch, Trumansburg, N. Y., first on largest potatoes, score, 77; and Forest C. Gibbs, Fillmore, N. Y., first on fairest potatoes, score, 86. There were 15 exhibits of extra early varieties, 15 medium early, 72 late, 20 new or unknown, 14 large and 24 fair.

National Beekeepers' Meeting.—The National Beekeepers' Association met at Cincinnati, Ohio, Feb. 12-13. Delegates were present from 14 states. A program of addresses upon subjects of national interest was given. Officials were elected as follows: Pres., Dr. B. N. Gates, Amherst, Mass.; vice-pres., Prof. H. A. Surface, Harrisburg, Pa.; sec., E. B. Tyrell, Detroit, Mich.; treas., C. P. Dadant, Hamilton, Ill.

Cornell Stock Sale.—The third annual stock sale held at Cornell, Feburary 14, in connection with Farmers' Week, brought out a good attendance of buyers and good prices. Fifteen horses, mostly under 3 years of age, brought an average of $184. Twelve bull calves, varying from three weeks to several months, averaged $48.70 each, and 17 head of swine, from a few weeks upward, averaged $20.30.

Basket Willow Distribution.—The U. S. Department of Agriculture is preparing to fill requests for basket willow cuttings grown last year on its experimental farms. There will be given out 50 to 100 cuttings to each person, to farmers who wish to make trials of basket willow on lands too wet for other crops. Each recipient of these cuttings is required to make a later report of the treatment given and results obtained, the purpose being to secure information as to best varieties for each locality. For full information, address Department of Agriculture, Washington, D. C.

Boys' Poultry Club.—The boys of Red Bank, N. J., and vicinity have organized a boys' poultry club, starting with 20 members. A show is planned for the spring.

Hydraulic Ram Advertisement.—In the advertisement of the Kline Water Ram, appearing in Pennsylvania Farmer of February 8, the type made the address appear as Weavertown, Pa., whereas it should have been Beavertown, Pa. If your letters to this advertiser have been returned, readdress them to J. M. Kline, Beavertown, Pa.

Wood Sawing demands an engine with plenty of power; one that does not "die down" if the wood is a little hard or knotty.

Jack of All Trades Kerosene Engines

give more power than rating calls for—always have a surplus for emergencies. Turn out lots of work at little cost as they run as well on kerosene (coal oil) as on gasoline. Simple. Reliable. Durable. Always ready—will last for years and work every day. Run anywhere, anytime.

2-4-6 H. P. Horizontal; also other types and sizes.

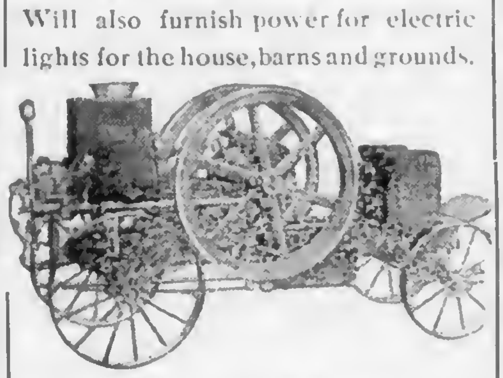
Saw Frames strongly built of best materials. Sliding or tilting tables.

Write for Catalog No. FF 1732 State size and type of outfit required.

Fairbanks, Morse & Co.
New York Cleveland Chicago

Portable Outfits also furnished. Order one and make good money sawing for neighbors.

Oil and Gasoline Engines, Oil Tractors, Pumps, Water Systems, Electric Light Plants, Wind Mills, Feed Grinders



OTTO

Portable Gasoline Engines

Won their prestige through merit. Farmers who are using them will tell you the Otto lasts a lifetime; can be depended on day after day—year in and year out, for all kinds of farm work—threshing, pumping, grinding, ensilage cutting, wood sawing, etc. Will also furnish power for electric lights for the house, barns and grounds.

This Otto portable is easy to operate; consumes less fuel than any other similar engine made. Thousands in use, for 25 to 30 years, are today running in an entirely satisfactory manner. Would you like to see proof of this? We will gladly show you letters and refer you to some nearby farmers. Tell us the kind of work you have—perhaps the Otto stationary engine will suit your needs better. Bulletin and information describing Otto types for farm work sent free. Write today.

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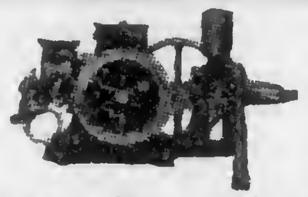

Easy Pumping

Have you had to depend on the wind for pumping water? The wind is uncertain—the right way is with a

1½ h.p. Rumely-Olds Engine

You'll get your water at low cost, you save a lot of time and work—you'll have an engine that will do your pumping in a short time and be ready for general service the rest of the day. To make pumping no job at all, hitch this engine to a

Rumely Pump Jack

Then all your pumping troubles go. You have a real outfit at a very slight cost.

Rumely-Olds Engines are strong and simple—Rumely Pump Jacks are right, too.

Think the combination over—see if it wouldn't pay you to have it.

The Rumely-Olds 3 h.p. Engine will handle a bigger job—we have them in all sizes, stationary, skid mounted or portable—so we're sure to meet your requirements, and we have the proper pumping outfit for each size.

Write for the Olds Engine Data-Book No. 344, and the special folder on Rumely Pump Jacks—ask name of our nearest dealer.

RUMELY PRODUCTS CO.
(Incorporated)
Power-Farming Machinery
HARRISBURG, PA. COLUMBUS, OHIO. NASHVILLE, TENN. 55g

The Price of Grain

is not more important to the farmer than the COST of harvesting the crop. No matter how high wheat is, unless cost of production is low, there is no profit. To get YOUR wheat in economically, use

The Johnston "Continental" Binder

the machine whose satisfactory service, for over a half century, has caused thousands of owners to say:

"Certainly! Buy a Johnston"

Fully described in our big 1913 Catalog, which also illustrates the famous JOHNSTON Line. Write for YOUR copy TODAY. FREE.

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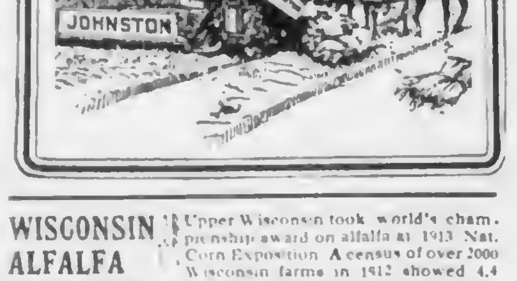

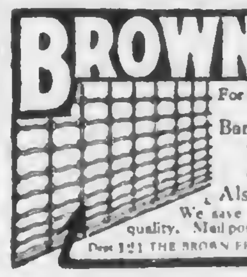

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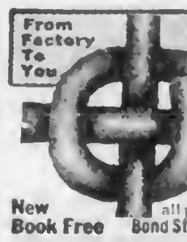

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Grange

This department is conducted by R. P. Kester, Lecturer of Pennsylvania State Grange. Notes, queries, comments and news of grange work are invited from readers. Obituary notes and news of purely local interest can not be used. Address all communications for this department to R. P. Kester, Grampian, Pa.

NEW YORK STATE GRANGE

A busy and profitable session of the New York State Grange was held at Buffalo last week. Not in years have so many important matters come before the annual meeting, and never, as far as the writer's knowledge goes, has the business of the session been more carefully considered and more expeditiously despatched. The 500 delegates have kept the grange standard of action above criticism, and that action is bound to have a wholesome influence on public affairs in their relation to legislation. We have space for only brief reference to some of the more important reports and resolutions.

The question of licensing and bonding commission merchants was much discussed. The grange is unanimously in favor of the bills now before the legislature looking to such action. On the subject of co-operation and the organizing of co-operative societies, the standing committee on co-operation was directed to inform itself carefully in respect to the pending bills in the legislature, and to take such action as it deemed wise in respect to aiding in the organization of such societies. The grange approved a legal reserve life insurance company, organized under the laws of the state. On uniform school text-books, it was recommended that this uniformity be favored, provided the books are furnished free of cost to the pupils. The meeting again declared in favor of proportional representation in the National Grange.

The State Grange Secretary was directed to furnish information to dairymen about the purposes of the dairymen's league. The state conservation committee was commended for its action in attempts to conserve the water powers of the state, and Governor Sulzer was also commended for his announced policy to keep the public health department out of politics. Regarding the public service commission, it was recommended that the non-partisan principle of choice of public service commissioners be followed by Governor Sulzer, and that he be informed of this action of the grange. A more effective enforcement of the pure food laws was demanded. In dealing with trusts, control by suitable legislation was advocated. It was also recommended that the money deposited in the postal saving bank by the common people be let out in mortgages on real estate on low rates of interest. It was recommended that the legislature appropriate a certain sum of money each year for the purchasing of available lands to be set aside as bird and game refuges, and that all hunting on such grounds be absolutely forbidden.

The Grange opposed combinations of retail dealers in feed to prevent farmers from buying feed from wholesale dealers, as such combinations restrict trade and are in violation of the law: also the free distribution of seed by the government. It favored an appropriation by the legislature in sufficient sum to erect certain buildings at the experiment station at Geneva. A resolution which supported the movement to amend the agricultural law in reference to bovine tuberculosis requiring a physical test of all dairy cattle in the state with fixed indemnity of $15 for each animal condemned, was reported upon unfavorably by the committee. Discussion followed, and when the vote was taken the report was not concurred in.

The grange favored the establishment of farm bureaus, when the farmers in any county desired them, and not otherwise. The report of the trustee of the Cornell University was of general interest. There are over 6,000 students at the university, and of this number over 2,000 are enrolled in the College of Agriculture, which is a gain of 440 over last year.

The committee on co-operation recommended to the state grange that its executive committee shall appoint a committee of three to formulate a workable, harmonious plan for the organization of co-operative societies among producers; that said committee shall report at the earliest time practicable to the executive committee of the state grange; that upon the approval of the plan by the executive committee, proper forms for the organization of co-operative societies shall be prepared and distributed wherever required for the organization of such co-operative societies; that the executive committee of the state grange shall thereupon appoint a competent supervisor of co-operative organization work, whose duty it shall be to endeavor thru the subordinate and Pomona granges to accomplish the organization of co-operative societies thruout the state among producers, and further, that as rapidly as those co-operative societies can be organized, they should incorporate under a law which will probably be enacted by the legislature at the session, giving to the members of the co-operative societies the advantages to be derived under such law.

The committee further approved of the resolutions providing for the establishment of co-operative wholesale and retail markets in New York and other cities thruout the state, also for state marketing commission to supervise the establishment of co-operative markets. The committee disapproved the proposed appropriation of $20,000,000 by the legislature for the establishment of co-operation among farmers. This report received the approval of the grange.—New Yorker.

McSPARRAN'S GRANGE NOTES

Centralization a Dominant Idea

Fifty years ago we were, as a nation, engaged in the bitterest kind of a bloody struggle over the right of a state to withdraw from the Union. Or, to state it in general terms, against the idea of centralization. The states were very jealous of their rights as states,and were unwilling to admit a larger power in the federal government. Industries were being placed at favorable points thruout the country and Congress was appealed to for legislation to foster and encourage these infant industries. Education was a community question. The public schools were conducted by the local authorities, practically as they saw fit. Higher branches were taught thru academies and colleges under the guidance of a local board, or by a particular church or denomination.

Roads seemed to wind around between the fields, apparently as tho trying to get thru the country with little inconvenience to the individual owners of property rather than to furnish an easy, graded, direct line of communication between two given points. A workman started as an apprentice and learned the whole business, not the making of a particular piece, but the whole thing, whether complicated or simple. His wages were a matter to be decided between himself and his employer, and the hours of labor as well. The pendulum of public sentiment had, at that time, swung to the very limit in opposition to centralization. But as the years went by, a change of feeling in this respect has been developing, until today the pendulum has reached the other end of its swing, and now all is combination, centralization and association.

We have combinations of capital, possibly surpassing anything ever known before in the history of mankind. We have combinations of labor that dictate the amount of work, the hours of labor and the price paid. The individual is lost in a great industrial combination of capital and labor; lost in the division of output into piece work by capital; lost in the control of the sale of his labor and ability by the restrictions placed about him by federated labor.

The community school is a thing of the past. The old academy is replaced by the state controlled "township high school." The control of the whole school system has very largely been centralized into a department of state government. The state says how many months the schools shall be open. The minimum price that teachers are to be paid is under state law. The curriculum of the high schools is largely determined thru the conditions placed around state appropriations for this purpose. The idea is much urged that the schools of a district should be centralized by hauling the children to one place.

One time banking was a local affair, often operated by one person, but step by step the private character of the business has been destroyed. Federal supervision has been installed. Large numbers of banking institutions are tied together thru "corresponding banks" and "clearing house associations," and now the proposition is earnestly put forward to have a central institution that would have practical control of the whole banking system. The intense centralization of this business has wrought no good to the people, because it does not guarantee to the depositor the absolute assurance of the safety of his money on deposit, while on the other hand the control of credits puts the business world at the mercy of the money kings, and the control of the volume of money, if granted, would put the whole prosperity of the people in the hands of a paltry few.

Community enterprises, such as mills, factories and furnaces, that were once such a boon to the surrounding neighborhood, are now closed, not because of competition, but to prevent competition. The infant industry that once needed protection from foreign competition is now submerged in its own centralization.

Where once it was thought that two families could not live happily under one roof, now our department houses bring families by dozens into one housing plant. In the mercantile world the great department store has to a large extent supplanted the individual merchant. In transportation the railroad system, with its thousands of miles of owned and leased lines and their connecting steamships, has taken the place of the railroad company. And thus in every line of thought and endeavor this idea of centralization has been working out until we are now at the extreme in this direction.

It must not for a moment be imagined that all this concentration is hurtful or evil. In many cases it has come to stay, as a needed economy in operation. But at present there seems to be a turning of public opinion back toward a breaking up of this concentration, and it becomes a subject of intense importance just what should be done to keep as nearly as possible to the "Golden Mean." We would not want the railroad systems seggregated into the original companies that composed them, but we do want the water taken out of their capital and a set of rates established proportionate to the actual value of the property and the cost of service rendered.

We would not want our great industrial plants dismembered, but we would hail the day when public sentiment would forbid putting a human being at piece work year after year, making the same old thing in the same old way. While the old way of one man going thru every part of the business sacrificed economy of construction, yet it must be remembered that the new way sacrifices the development of a human being made in the image of his Maker and capable of reproduction only after its kind.

In the same way the grading of our schools and their curriculum is surely a progressive step, and yet if carried too far, the child going to a different teacher for each branch, there is danger that the impact of the character of the teacher upon the development of the child may be lost. We can not forget that possibly the most rounded and most perfectly equipped human mind that the world has ever known was brought up at the feet of Gamaliel.

Speed of operation is all right. Dividends are essentials in business. But "man's a man for a' that," and in all our industrial activities, in all our legislative enactments, in all our social environments, in all our religious teaching, we dare not forget that human beings are individuals, not masses, and that the highest civilization is not measured by collossal fortunes, by mammoth buildings, by magnificent systems of operation, but by the production of that environment which will best enable each man and woman, boy and girl to most fully realize that development of body, mind and soul consistent with the talents vouchsafed the individual by the great Creator.—John A. McSparran.

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Live Stock

COST OF PORK

I recently listened to a conversation between the members of a mixed crowd of business men and farmers. Someone brought up the subject of the cost of pork. The prevailing opinion seemed to be that the feeder who produced pork did not get value for the grain that he fed into his hogs. Several asserted that it would take one bushel of corn to produce four pounds of bacon; however, no one seemed to have any reliable data on the subject.

In looking over bulletins from experiment stations I find that, upon an average, one bushel of corn will produce 10 pounds of gain, live weight, when fed to a hog. When fed in connection with other feeds, the gain is often much larger. Once I put a grade Chester White pig in a pen when weighing 31 pounds. This pig was fed 384 pounds of wheat bran, corn, oats and buckwheat, mixed about equal parts, and mixed with pure water when fed. The pig was in a pen where it could not get any other feed. It was not even given an occasional drink of dishwater. When the 384 pounds of feed was consumed, in about three months, the pig was slaughtered, and its dressed weight was 103 pounds. If we add 25 pounds for the amount lost in dressing, and subtract the live weight when the feeding began, we have 97 pounds as the weight gained from 384 pounds of feed. This feeding was done from the middle of November to some time in February—by no means the best season for getting best results from feeding.

IMPRECATION, GRAND CHAMPION STALLION AT 1912 INTERNATIONAL LIVE STOCK SHOW.

Two years ago I fed two sows and their litters on middlings, corn meal, a little ear corn and a few potatoes. They were allowed free range to gather what they could from the pasture in April and May. They were fed from the time the pigs were farrowed until they were eight weeks old. At that time the pigs averaged 30 pounds each. At the prices two years ago I found that the feed bill averaged $1.21 for each pig. Since that time I have made another similar test, and the feed bill averaged within two or three cents of the first for each pig at eight weeks old.

Such tests show whether the feeder is making a profit or is losing money, and should be tested out by individual feeders so that local conditions, such as cost of feed, value of product after produced for that particular locality may be considered.—A. J. Legg, Nicholas Co., W. Va.

THE SELECTION OF THE STALLION

The selection of the stallion is of much greater importance than that of the mare, for he has more influence on the offspring and has more progeny each year, while the mare only has one.

A sire must meet the demands of the locality. If Percherons are being bred in the community, one should not introduce a Shire stallion or a Belgian. If Belgians are being bred, do not introduce a Clydesdale, etc. The size, type and color are factors judged by a community. Many companies are formed for the purpose of importing stallions or buying single stallions. The proper time of year to buy is in the fall. The reason for this is that large importing companies do their importing in the late summer, in time to fit their horses for the fall fairs. So by buying in fall one will have a better and greater variety to select from. Also the stallion will have become accustomed to his surroundings, and the owner will know him better by the time the breeding season arrives. Another reason for buying in the fall or early winter is the advertising value to be secured. Owners of mares will have more leisure in winter to come and look him over, and they will go home and tell their neighbors, so that the increased number of mares will more than pay for the extra cost of keeping him over winter.

The importer or breeder to buy from is preferably a firm that has been in business for years and has a good reputation for honesty. Avoid men going about thru the country unloading unsound stallions. All reputable firms will guarantee their stallions to be successful breeders. A certificate of soundness also should be secured with the stallion. Do not be afraid to buy an American-bred animal, for in all the important state fairs during the past year the majority of prize winners were American-bred horses.

It is needless to say that the stallion should be pure-bred. The time is past when it is profitable to use a cross-bred stallion on mares. A purebred stallion will nearly always have a better conformation than the cross-bred, and he is more likely to transmit his character.

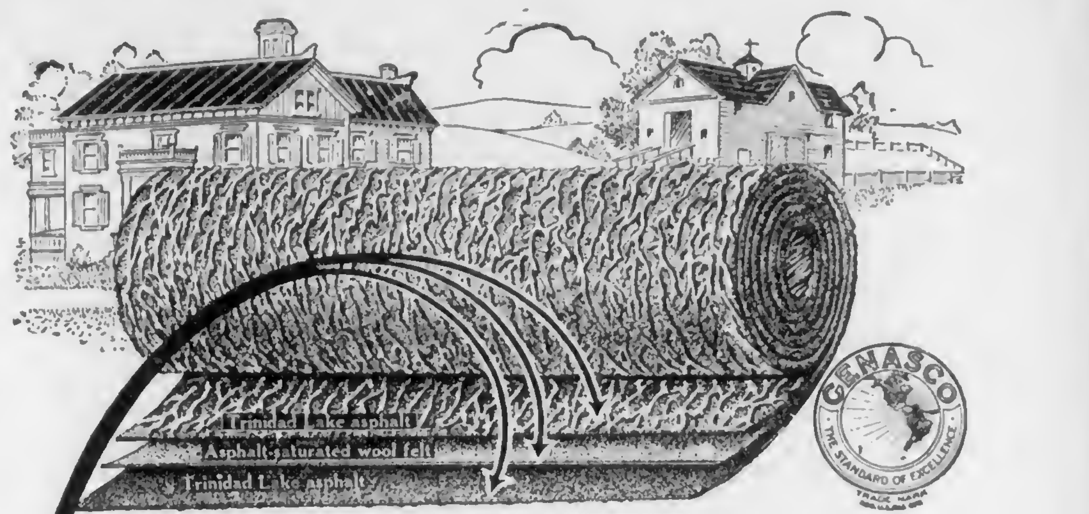
If the mares of the community weigh 1,000 to 1,200 pounds do not buy a 2,000-pound stallion, but one that weighs 1,500 to 1,600 pounds, for such a large gap can not be filled at once. For best results, the margin of weight between stallion and mares should not be over 500 pounds. A 1,700-pound stallion, kept in a community in Ohio where the mares average 1,300 pounds, shows get, altho not so large, much neater build, better constitution, and are not so ungainly as the get of a 2,000-pound stallion kept in the same community and bred to the same sized mares. Altho the larger stallion is probably just as good an animal, the difference in the progeny is due to too large difference in size between him and the mares he is bred to. If he were kept in a community where the mares were 1,500 to 1,600 pounds in weight, his progeny would show to advantage over a smaller stallion.

Summing up briefly: First, deal with a responsible firm. Second, have a guarantee, pedigree certificate, and a transfer certificate; also a definite statement that the horse is what he is described in the certificate. In this way you get a purebred animal. Third, have a horse of good conformation and soundness.—Hugh Fergus, State College, Pa.

SILAGE FOR HOGS

Many years ago when I first commenced to feed corn silage to hogs I supposed that all that was necessary was to throw a bushel of silage in the pen, let them eat and grow fat. But I have found by experience that it does not pay to feed silage in that way. I have also found that silage makes a splendid hog feed when properly fed, especially to breeding sows and shoats.

The proper way, or the way I have found best, is to mix silage with the swill or water. Put the grain ration on top of the silage, mix thoroly and feed as much silage as the hogs will eat up clean. When feeding in this way, it is surprising how many hogs can be wintered over with a very small grain ration. I have barley, buckwheat, Canada field peas and corn for the grain ration. I would also feed corn and cob meal, had I a cob mill, but at present we have none. Silage must be regarded as the roughage portion of the ration. It is valuable as such, but it will not take the place of grains. It is a cheap feed for maintenance, but not for fattening.—Joseph E. Fischler, Tioga Co., Pa.



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Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., Feb. 17, 1913.

Butter receipts during the week were light and under a fair demand prices ruled steady. Prints were also in small supply and quiet. Eggs continued in liberal receipt, and on advices of still greater shipments the market declined 2 cents on most grades. The demand for dressed poultry was firm, and under limited supplies the market ruled strong. Most vegetables were in active trading, altho potatoes, onions and cabbage were plentiful, dull and hard to sell at satisfactory prices. Fruit was weak, altho prices ruled steady on all good grades.

Butter.—Western creamery, 38c; extras, 36c; firsts to seconds, 30@35c; special prints, 42@45c; near-by prints, 39c.

Cheese.—New York full cream, 18c; skims, 11@14c, according to quality.

Eggs.—Candled, 24@26c doz.; extras, 22c. Current receipts at $5.85@6.00 per standard case.

Poultry.—Fowls, 16@16½c; old roosters, 12@12½c; spring chickens, 17@18c; ducks, 18@19c; pigeons, 18@25c pair; turkeys, 19@20c.

Dressed Poultry.—Western fowls, 15@17½c; roosters, 13½c; chickens, 18@20c; turkeys, 20@25c.

Vegetables.—White potatoes, choice, 70@72c bu. Onions, 25@40c bu. Cabbage, $4.00@7.00 ton. Lettuce, $1.25@1.75 basket. Cucumbers, $2.75@3.50 basket. Celery, 25@60c bch. Spinach, 75c@$1.15 bbl. Kale, 50@65c bbl. Egg plant, $2.00@2.50 box. String beans, $2.00@3.00 bu. Peas, $2.00@4.00 basket. Peppers, $1.75@2.00 carrier. Tomatoes, $2.00@3.25 carrier.

Fruit.—Apples, choice varieties, 25@75c hamper, $2.00@3.50 bbl. Cranberries, $5.00@8.50 bbl.; $1.75@2.50 crate.

Hay and Grain.—No. 1 timothy, new, $18.50@19.00; No. 2, $16.00@16.50; No. 3 do., $14.00@15.00. No grade, $8.00@10.00. Clover mixed, No. 1, $14.50@15.00; No. 2 do., $12.50@13.50. No. 1 tangled rye straw, $13.50@14.00; No. 1 wheat straw, $10.50@11.00; No. 1 oat straw, $11.00@11.50. New shelled corn, No. 2 yellow, 57½@58c; No. 3 yellow, 56@56½c; new cob, 58c per 70 lbs. No. 2 red wheat, 99½c@$1.01½; No. 3 do., 97½@98½c. No. 2 white oats, 40½@41c. Standard white, 39½@40c; No. 3 white, 39@39½c.

Hides and Skins.—Steers, abattoir, 17@17½c; do country, 14@14½c. Cows, abattoir, 15@15½c; do. country, 13c. Bulls, abattoir, 13c; do. country, 11c. Calf skins, Nos. 5 to 12 and up, $1.35@2.45; do. green, 13@14c lb.

Seeds.—Timothy, $3.15@3.25 bu.; clover, white, $25; do. crimson, $6.25; do. mammoth, $14.50; do. sweet, $13.00; do. alsike, $13.25; red top, per bu., $13.50; alfalfa, $7.00@10.00; Canada field peas, $2.35, vetch, $8.50; rye, winter, $1.35; spring, $2.25; soy beans, $3.25; barley, $2.50; buckwheat, $1.50; cowpeas, $3.00@3.25; millet, $1.90@2.75; oats, $1.20; wheat, $1.70@2.00.

Coffee.—Rio, 7s, 13c; Santos, 4s, 15c. Mild Coffee—Cordova, 15¼@17½c.

Provisions.—City beef, smoked and air-dried, 22@23c. Beef hams, 31@33c. Pork, family, $21.00@22.00. Hams, cured, 13¾@14¼c; skinned, 13½@14¾c; smoked, 16½@18c. Other hams, smoked, city cured as to brand, 16@18c. Picnic shoulders, 9¾@10¼c; do. smoked, 11½@12c. Bellies in pickle, 13½@14½c. Breakfast bacon, as to quality, 17@22c. Lard, refined, 11¼@12c; do. in tubs, 11½@12c; do kettle rendered, 11@11½c. Tallow, prime city, 6⅞@7c; do. country, 7c; do. dark, 5¾c; do cakes, 7¼c.

Sugar.—Cut loaf, $5.15 cwt.; cubes, $4.60; powdered, $4.45; granulated, $4.35; standard granulated, $4.40; crystal A, $4.35.

Flour.—For 196 lbs., in wood, winter clear, new, $4.10@4.30; do. straight, new, $4.50@4.75; favorite brands, $5.00@5.35. Rye flour, Penna., $3.60@3.75.

NEW YORK PRODUCE

New York City, Feb. 17, 1913.

A considerable portion of the butter receipts have shown winter defects, altho there is much choice stock arriving, which is bringing full prices. All grades are steady. Eggs continue to arrive in liberal shipment, and as the demand has not strengthened, prices have again declined. Only strictly fresh stock is wanted at satisfactory prices. Dressed poultry is quiet. Both the demand and receipts are light, and the general dullness of the market makes a very unsatisfactory condition. The vegetable market continues overstocked with onions, on which the price is very low. Other vegetables are in fair demand.

Butter.—Creamery firsts to extras, 33@36c; thirds to seconds, 29@32½c; factory, 18@23½c; state dairy, 24@34c; packing stock, 17@21½c; process, 19@26½c.

Cheese.—Whole milk special, 18c; do., common to fancy, 16@17¾c; skims, 8@14¾c.

Eggs.—State and near-by, 21@26c; fresh gathered, 18@22c; mixed, 20@21c; refrigerator, 14@17c.

Dressed Poultry.—Turkeys, dry, 19@24c; chickens, Penna., 15@25c; fowls, 14@17c; old roosters, 13½c; ducks, 16@19c; roasters, 19@20c.

Live Poultry.—No quotations.

Grain.—Easy. Wheat, No. 2 red, $1.09½; No. 1 Northern, $1.00¾. Corn, 56½c. Oats, standard white, 39c.

Vegetables.—Potatoes, state, $1.80@1.90 per 165-lb. bag. Cabbage, 90c@$1.00 crate. do. Danish, $6.00@7.00 ton. Green beans, $2.00@3.25 basket. Carrots, $1.00@1.75 bag. Cucumbers, $1.00@1.50 dozen. Lettuce, 50c@$2.00 basket. Squash, $1.50@2.00 bbl. Celery, $1.50@4.50 case. Horseradish, $3.00@4.50 cwt. Parsnips, 75c@$1.00 bbl. Turnips, 50@75c.

Fruit.—Apples, $1.75@4.00 bbl., according to variety. Pears, 50c@$1.10 basket. Cranberries, $6.00@10.00 bbl.

BALTIMORE PRODUCE

Baltimore, Md., Feb. 17, 1913.

Choice grades of butter were scarce, and as the demand was good, prices were firm. Other grades were in greater supply, but only equal to the demand. Strictly fresh eggs were more plentiful than last week, altho prices on the same and other grades were steady. There is still much unattractive stock being offered. Prices on live poultry were steady and the supplies generally were of good stock. Fruits and vegetables enjoyed active trading, with the exception of potatoes, which were more than ample to meet the demands.

Butter.—Creamery, fancy, 36@37c; do., choice, 35@36c; prints and blocks, 35@38c. Maryland and Penna. rolls, 20@22c; prints, 20@21c. Process, 25@27c.

Cheese.—Flat, 17½c; Daisy, 18@18½c.

Eggs.—Md. and Penna., firsts, 20c; western, 20c; southern, 19c.

Live Poultry.—Hens, 13@14c; chickens, 19c; old roosters, 9@10c. Turkeys, 21@22c. Ducks, 16@17c. Geese, 14@15c. Guinea fowls, 30@50c each.

Dressed Poultry.—Turkeys, 22@23c; chickens, 18c; roosters, 10@11c; ducks, 17@20c; geese, 11@17c.

Vegetables.—Potatoes, white, 55@60c bu. Sweets, $2.25@2.75 bbl. Cabbage, $1.50@1.75 crate; Danish, $5.00@7.00. Onions, 25@40c bu. Lettuce, 75c@$1.25 basket. Egg plant, $2.00@2.25 crate. Peppers, $1.50@2.00 crate. Squash, $1.50@2.00 basket. Spinach, 30@40c box. Cucumbers, $3.00@4.25 basket. Beans, green, $2.25@2.75 basket. Celery, $1.50@2.50 crate. Turnips, 20@30c box. Cauliflower, $2.50@2.75 bbl. Horseradish, $1.50@1.65 box. Beets, 35@40c bu.

Fruit.—Apples, new, $2.00@3.50 bbl.; 50c@$1.00 bu. Cranberries, $8.00@9.00 bbl.

Grain.—Wheat—No. 2 red western, $1.06¾; spot, $1.07. Corn, spot, 54½c; contract, 53⅞c. Oats, No. 2 white, 39¼@39½c; standard white, 38¼@38½c; No. 3 white, 37¼@37½c. Rye, 55@65c.

Hay and Straw.—No. 1 timothy, $18.50@19.00. No. 2 timothy, $17.00@17.50; No. 3 do., $14.00@16.00. Choice mixed, $15.00@15.50. No. 1 clover, $13.00@13.50. No. 2 do., $11.00@12.50. No. 1 tangled rye straw, $12.50@13.00. No. 1 oat straw, $9.00@10.00. No. 1 wheat straw, $8.00@9.00.

Millfeed.—Spring bran, $23.50@24.00. Middlings, flour to white, $26.00@28.00; western middlings, $24.00@24.50; city mills mids., $24.50@25.00.

BUFFALO PRODUCE

Buffalo, N. Y., Feb. 17, 1913.

Butter.—Steady and strong. Creamery choice, 37@38c; choice dairy, 31@33c.

Cheese.—Quiet and steady. Fancy, 18c; good 16½@17½c.

Eggs.—Steady. State, candled, 30@31c; storage, 22@24c; mixed, 28@29c.

Dressed Poultry.—Active. Turkeys, per lb., 23@25c; fowls, fancy, 16@18c; chickens, 16@19c; old roosters, 13@14c; ducks, 20@22c; geese, 17@18c.

Live Poultry.—Firm. Chickens, 16½@18c; ducks, 18@20c; geese, 15@17c; turkeys, 20@23c.

Vegetables.—Potatoes, firm. Home-grown, 65@66c bu. Cabbage, $1.50@2.50 per 100. Onions, 40@65c bu. Beans, green, $2.75@4.00 hamp. Turnips, 75@80c bbl. Celery, 40@50c doz. Lettuce, 40@70c.

Beans.—Quiet, steady. Marrow, fancy, $3.30@3.40; medium, $2.50@2.60; red kidneys, $2.75@3.00.

Fruits.—Apples, $2.25@3.25 bbl.; 50@75c bu.

Honey.—Firm. No. 1 fancy, 17c; No. 2 new, 13@15c; dark, 12c.

Hay.—Weak. Timothy, choice, on track, $17.50; No. 1 do., $16.50; No. 2 $15.50; light mixed, No. 1, $15.50; rye straw, $10.00@11.00; oat and wheat straw, $9.00@10.00.

Feed.—Steady. Spring bran, $21.00 ton. Standard mids., $21.50. Corn meal, $25.00. Gluten, $30.50. Hominy, $24.25. Oilmeal, $30.00.

YORK PRODUCE MARKETS

York, Pa., Feb. 17, 1913.

The attendance was very poor at all markets in the early part of the week. The close made up for this and trading was brisk. Butter is firm under a limited supply. Eggs are tending upward under increased supplies. Poultry is advancing.

Butter.—Country, 32@35c; separator, 33@36c. Milk, 6c per qt.

Eggs.—23@25c doz.

Poultry.—Hens, 14c. Dressed poultry, 40@90c.

Vegetables.—Potatoes, 10c half peck; 55@60c bu.; cabbage, 2@4c each; lettuce, 5@10c; beets, 3@5c bunch, 10c per ½ pk.; radishes, 2@5c; turnips, 10c per ½ pk.; onions, 10c per ½ pk.; lima beans, 12c qt.; soup beans, 10c qt.; celery, 3@7c stalk; sweet potatoes, 10c per ½ peck; spinach, 10c per ½ peck; parsnips, 10c per ½ pk.; sauer kraut, 5@7c qt.; lard, 12@14c lb.; corn meal, 5@6c qt.

Fruit.—Apples, 10@25c a half peck; grapes, 12@15c ½ pk.; pears, 12@15c per ½ pk.; chestnuts, 15c qt.; walnuts, 12@15c per ½ peck; strawberries, 25@30c box.

Retail Grain Market.—Wheat, $1.12; corn, 68c; oats, 50c; bran, $1.35 a cwt.; rye, 78c; middlings, $1.55 a cwt.

Wholesale Grain Market.—Wheat, $1.02; corn, 55c; oats, 40c; rye, 68c.

WILMINGTON PRODUCE

Wilmington, Del., Feb. 17, 1913.

Market quotations are mainly steady with those of last week. Trading is fair and the supply about normal.

Fruits.—Apples, 50@80c basket; $2.75@4.00 bbl. Strawberries, 35@40c box.

Vegetables.—Potatoes, 75@85c bu.; $2.00 bbl. Cabbage, 75c@$1.00 bbl.; 25c basket. Onions, 40c basket. Celery, 35@60c doz. Spinach, $1.25 bbl. Sweet potatoes, 80@85c basket; $3.00@3.75 bbl. Kale, 75c bbl. Carrots, 10c ¼ pk. Lettuce, $1.50 basket.

Poultry.—Chickens, live, 16@17c; do., dressed, 18@19c. Ducks, 12c lb.; dressed, 16@18c.

Eggs.—24@25c; storage, 20c.

Butter.—Creamery, 30@33c; prints, 38@45c.

WASHINGTON PRODUCE

Washington, D. C., Feb. 17, 1913.

All classes of produce were in active demand and trading was normal. The receipts in most of the markets were ample to meet these demands, however, and prices remained at about last week's figures. Some classes of vegetables declined a shade owing to the fact that receipts were not of strictly high-grade stock.

Eggs.—Near-by, fresh, per dozen, 20c; southern, per dozen, 20c.

Cheese.—New York, new, per pound, 19c; flat, 19c.

Butter.—Best prints, per pound, 39½c; tub, 38½c; process, 27@28c; undergrades, 25c.

Live Poultry.—Hens, per lb., 14½@15c; roosters, 10c; springers, 18@20c; turkeys, 20@22c; geese, live, 12@15c; ducks, 16@18c.

Vegetables.—Potatoes, bbl., $1.25@1.50; 50@80c bu. Onions, 90c@$1.00 per 100-lb. bag. Lettuce, per bas., 75c@$1.50. Beans, $1.50@2.50 basket. Peppers, per crate, $1.00@1.50. Egg plants, per box, $1.50@3.00. Squash, per bbl., $1.50@2.00. Beets, 50c@$1.00 per 100 bchs. Mushrooms, per lb., 25@40c. Carrots, 1½@2½c bch. Cabbage, $1.00@3.00 bbl. Radishes, 50c@$1.00 per 100. Cauliflower, $1.25@1.75 crate. Apples, $1.50@4.50 bbl.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., Feb. 17, 1913.

The cattle market during the past week showed a decided improvement. Prices were higher and a stronger feeling prevailed in all grades.

	Beef Cattle	Sheep and Lambs	Hogs
Total for week	4,655	11,642	5,751
Previous week	4,521	11,145	5,024

Best steers	$8.40@8.65
Choice steers	8.00@8.10
Good	8.10@8.25
Medium steers	7.85@8.00
Common steers	7.25@7.50
Bulls	6.50@7.00
Fat cows	5.00@6.75
Thin cows	3.00@3.50
Milk cows	40.00@70.00

Veal calves are steady.

Best calves	$11.00@12.00
Good to choice do	10.00@10.50
Medium	7.00@8.00
Common do.	6.50@6.75
Thin do.	5.00@8.00

On all good grades of sheep and lambs there was an upward revision of prices. Trading, however, was not as active as normally.

Extra wethers	$6.50@6.75
Choice wethers	6.00@6.25
Good wethers	5.50@5.75
Common to medium	3.00@5.00
Ewes, fat	5.00@5.50
Extra lambs	9.50@9.75
Good to choice do.	9.25@9.50
Common to medium	6.00@8.50

The hog market continued firm thruout the week. Trading was normal at advanced figures, westerns selling at $11.75@12.00.

City Dressed Stock.—Choice classes of dreshed meat are strong in sympathy with other markets. Trade is normal, at revised prices. Steers, 10@13c; heifers, 9@12c; cows, 7½@10½c. Veal calves, 14@16c; country dressed calves, 13@14c; extra do., 17c. Sheep, 10@11c; extra wethers, 12c. Spring lambs, 15@17c. Hogs, 12@12¼c.

PITTSBURGH LIVE STOCK

Pittsburgh, Pa., Feb. 17, 1913.

Today's cattle receipts were 80 loads. The market ruled active on all grades, strong on the better fat grades and steady on bulls, fat cows and heifers. Best fresh cows are steady, while the medium grades of springers are slow sale.

Good to choice	$8.40@8.80
Good, 1300 to 1400 lb.	8.20@8.40
Medium to good, 1200-1300 lb.	7.65@8.00
Tidy, 1050 1150 lb.	7.70@8.10
Fair to medium, 900-1100 lb.	6.50@8.00
Common to good fat oxen	4.00@6.00
Common, 700-900 lb.	5.25@6.40
Common to good fat bulls	4.00@7.00
Common to good fat cows	4.25@6.75
Heifers, 700 to 900 lbs.	4.25@7.50
Bologna cows	3.75@4.00
Fresh cows and springers	25.00@80.00

Calves.—Receipts were 500 head. The market ruled steady on all grades.

Heavy and thin calves	$5.00@7.00
Veal calves	7.50@11.00

Hog's.—Today's hog receipts were 55 double-deck loads. The market has been good, prices going higher than last week, but declining under heavy receipts.

Prime heavy	$8.65@
Prime medium weights	8.75@
Heavy mixed	8.70@
Best heavy Yorkers	8.75@
Light Yorkers	8.75@
Pigs as to quality	8.50@8.75
Common to good roughs	7.50@7.90
Stags	6.50@7.00

The supply of sheep and lambs today was 20 double-deck loads. There was a good demand for all classes. Sheep were active and 25 to 50 cents higher, while lambs were steady.

Prime wethers	$6.75@7.00
Good mixed	5.85@6.10
Fair mixed ewes and wethers	5.00@5.60
Culls and commons	2.50@4.00
Spring lambs	5.50@9.25

BUFFALO LIVE STOCK

Buffalo, N. Y., Feb. 17, 1913.

Cattle receipts today were 2,150 head. The market remained active and steady.

Choice heavy steers	$8.25@8.50
Medium	7.25@8.10
Yearlings	7.25@8.25
Plain heavy	6.50@7.15
Handy butchers	6.35@7.50
Good to choice fat cows	4.00@6.75
Good to choice heifers	5.00@7.50
Butcher bulls	4.65@7.00
Feeders	5.50@6.50
Stockers	4.25@5.40
Cows and springers	65.00@85.00

Calf receipts today were 1,100 head. The market was dull and 50 cents lower.

Choice veals	$11.00@12.00
Light and thin	4.00@6.50

There were 15,000 head of sheep and lambs on sale today. Sheep were in good demand and the market was active and firm. Lambs declined about 15 cents, and yearlings 10 cents.

Choice lambs	$8.75@9.00
Poorer grades	6.00@6.50
Yearlings	8.00@8.50
Wethers	6.50@7.00
Ewes	5.75@6.25
Sheep	6.00@6.50

Today's hog receipts were 16,000 head. Prices declined toward the close of last week and prices today were about on the same level, with rather slow demand.

Heavies	$8.70@8.75
Mixed and medium	8.70@8.75
Yorkers	8.70@8.75
Light Yorkers	8.75@8.90
Pigs	8.75@8.90
Stags	5.50@7.00
Roughs	7.75@7.90

NEW YORK LIVE STOCK

New York City, Feb. 17, 1913.

Calf receipts were 4,176 head. The market is higher.

Steers	$5.50@9.00
Bulls	5.25@7.00
Cows	3.50@6.50

Calf receipts were 2,908 head. The market is steady.

Choice veals	$12.00@12.50
Good veals	8.50@11.50
Culls	6.00@8.50
Barnyard calves	4.50@6.00
Fed calves	6.00@8.00
Westerns	3.50@5.00

Dressed calves are steady.

City-dressed veals	15@19c
Country-dressed veals	11@16c

Sheep and lamb receipts were 10,664 head. Sheep are strong and lambs lower.

Sheep	$4.50@6.25
Culls	3.25@4.25
Lambs	8.00@9.50
Culls	6.50@7.50
Yearlings	7.00@8.50

Hog receipts were 17,159 head. The market is lower.

Light to heavy	$8.75@8.90
Roughs	7.50@7.75

BALTIMORE LIVE STOCK

Baltimore, Md., Feb. 17, 1913

Beef receipts for the week were 1,730 head. The beef supply was equal to meet the normal demand. Trading was good and prices remained at last week's figures.

Steers	$4.75@8.25
Heifers	4.25@6.75
Cows	2.00@5.40
Bulls	3.25@5.25
Fresh cows	$27.50@77.50

Sheep and lamb receipts were 2,224 head. Under a light supply the market is higher.

Sheep	$3.50@6.25
Lambs	6.50@9.60

There were 14,976 hogs on sale during the week. Under greater demand for all classes of stock, the market has advanced and is firm.

Light western	$9.00@9.15
Heavy to medium	8.00@8.25
Near-by	8.80@8.95
Roughs	7.00@8.00
Pigs	8.25@8.50

Calf receipts for the week were 362 head. Most of the receipts were of unattractive stock, and under a light supply the market remained steady to firm at $6.00@11.00.

ELGIN BUTTER QUOTATION

Elgin, Ill., Feb. 17, 1913.

The quotation committee of the Elgin Board of Trade this afternoon declared butter firm at 35c a pound.

NEW YORK MILK QUOTATION

The wholesale milk price is $1.81 per 40-quart can for class C; class B, $1.91.

PITTSBURGH HAY AND GRAIN

Pittsburgh, Pa., Feb. 17, 1913.

At present the market is flooded with hay of every grade. Buyers are well supplied, and it is hard to sell current receipts at any satisfactory figure. Straw receipts are also heavy and as the demand is limited, little activity is shown in the market. No. 1 timothy, $15.00@15.50; No. 2 do., $13.00@14.00; No. 3 do., 10.00@12.00; No. 1 light mixed, $13.50@14.00; No. 1 clover mixed, $13.50@14.00; No. 2 do., $10.00@12.00. No. 1 clover, $13.00@13.50; No. 2 do., $10.00@12.00. No. 3 prairie, $11.00@11.50; No. 4 do., $9.00@10.00; No. 1 oat straw, $9.00@9.25; No. 2 do., $8.50@8.75; No. 1 wheat, $9.50@10.00; No. 2 do., $9.00@9.50; No. 1 rye, $10.50@11.00; No. 2 do., $9.25@9.50. Ear corn arrivals are more than sufficient to meet the limited demands. Market dull and weak. No. 2 yellow, 56@57c; No. 2 high mixed, 54@55c. Shelled corn receipts are in fair demand. Market is steady. No. 3 yellow shelled, 54@54½c; sample, 52½@53½c. Oats are in limited demand. Market barely steady. No. 2 white, 37½@38c; standard, 36½@37c; No. 3 do., 35½@36c; No. 4 do., 33@34½c. The demand for middlings is very slow, but bran has improved. Market dull. No. 2 white mids., $25.00@25.50; No. 1 brown mids., $22.50@23.00. Winter wheat bran, coarse, $22.50@23.00; do., medium, $22.00@22.50.

TOBACCO MARKET

At a recent meeting of the Lancaster County Tobacco Growers' Association, it was reported that the burning qualities, i. e., the smoking qualities of Pennsylvania tobacco has been made the subject of objection on the part of buyers. Altho this is probably a mere weapon used in an attempt to lower prices, it was proposed that state and federal authorities be notified so that, if a fact, the proper measures may be taken to correct the fault. At the same meeting it was said that the omission of stable manure would result in black burning tobacco, and that lime, too, should be used for best results. Another speaker stated that a good quality of commercial fertilizer is the only thing capable of producing the desired results, which is the quality of burning with a clear white ash.

Growers who have not sold are getting more or less anxious as the time approaches to prepare for a new crop. More tobacco remains unsold than is usual at this time of year, and the demand for it is not good. Packers claim that prices have dropped even lower than $9 and $3, but very few such sales can be found. However, the leaf market is pretty dull at present. Several sales were reported in the vicinity of Bowmansville, prices ranging from $8 and $2 to $1 and $2 per cwt.

The Wisconsin market is reported as devoid of life, with but few unsold crops. Prices are lower than early in the season. The Connecticut crop is nearly all sold, and conditions are quiet. In the Ohio region the main feature is the great and altogether unsuspected damage by pole sweat. On this account, buying has practically ceased. The general tobacco market of the country is in active condition, but far from booming. The burley region seems to enjoy the best condition, but even there prices have declined somewhat. In the stock market tobacco was quiet, with prices unchanged.—H. E. [illegible], February 17, 1913.

NEW APPLE VARIETIES

Apple breeding has only recently been done to any great extent, but success in the work now seems assured. The following new varieties and their parents have been introduced: Oswego (Sutton-Northern Spy), Rensselaer (Ben Davis-Jonathan), Cortland (Ben Davis-McIntosh) and Westminster (Ben Davis-Green Newtown). Others also have been bred. These are all described in Bulletin 350, of the New York Experiment Station, Geneva, N. Y.

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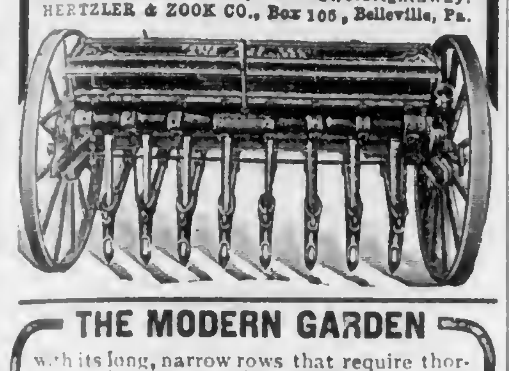

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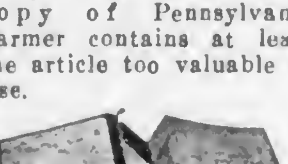

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A PLAN OF CO-OPERATION

Some definite suggestions as to how the farmers should get together with a view to remedying the evils of the present situation as regards producers and consumers were outlined in the report of the committee on co-operation at the recent New York Agricultural Society meeting. The remedy, they suggested, must be radical, comprehensive and lasting. There should be a central co-operative organization to assist and advise in the organization and operation of local co-operative societies. These local societies should be organized in every community selling produce or buying farm or household supplies. Co-operative wholesale and retail markets should be established in the larger consuming and distributing centers. Laws should be enacted favorable to the organization and operation of co-operative societies to secure a system of more liquid loans and to protect and conserve the interests of producers. The state should give liberal financial aid in organizing these co-operative societies thruout the commonwealth.

The committee also recommended that the agricultural society, in co-operation with the state agricultural department, endeavor to secure the co-operation of the state departments and societies of all the seaboard states from Maine to Florida to bring about a system of co-operative marketing direct from producer to consumer. The committee also asked legislation to provide adequate receiving terminals for food stuffs in New York, and to provide for the erection of suitable retail department food stores. It was proposed to organize a wholesale and retail co-operative corporation, with a capital stock of $5,000,000, more or less, to be subscribed and paid in by producers and consumers, which shall be an operating company or mutual agency to receive, sell and distribute food stuffs of all kinds, with dividends limited to 6 per cent on the capital stock, the balance of profits to be distributed among the co-operators. They also recommended the establishment by law of a state Food Commission to perfect and carry out plans for co-operative markets in all the large cities and towns of the state. The committee aver that the evils of the present system of food distribution are too great and complex for the unorganized public to cope with and that the remedy can never be applied without the intervention of the state.

Among the resolutions adopted by the society were the following: Asking legislation to enable the establishment of co-operative companies among producers and consumers; to forbid the use of the word "co-operative" in the name or in the literature of any association or corporation unless the same is incorporated under the co-operative act; that co-operative organizations be established on the principle of voluntary membership, so that equitable participation and control may be maintained. Another resolution approved of the establishment of state co-operative mortgage banks to finance farm mortgages and encourage the improvement of farm property. It was decided to start a movement to bring about an "agricultural week" in Albany next year.—New Yorker.

FEDERAL APPROPRIATIONS FOR AGRICULTURE

The appropriation bill for maintenance of the United States Department of Agriculture, as passed by the House, carries a total of $17,593,275, an increase of $911,779 over the current year, but $693,955 less than requested by Secretary Wilson. Some of the special items covered are $200,000 additional for meat inspection; $39,000 for purchase of drouth resistant field seeds; $50,000 for collecting and publishing information on marketing and distribution of farm products. Increases were granted for work in cattle tick eradication, farm management, farm demonstration, foreign seed and plant introduction, enforcement of food and drugs act, preventing spread of moths, road investigation.

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BOOK II

WHAT HAPPENED AT NINE O'CLOCK

CHAPTER XV (Concluded)

All present waited anxiously for Edith's verdict.

"Mr. Arrelsford is mistaken, General Randolph," she said quietly, "Captain Thorne has the highest authority in this office."

Arrelsford started violently, and opened his mouth to speak, but General Randolph silenced him with a look. The blood of the old general was up, and it had become impossible for anyone to presume in the least degree. Thorne started, too. The blood rushed to his heart. He thought he would choke to death. What did the girl mean?

"The highest authority, sir," continued Edith Varney, slowly drawing out the commission, which everyone but she had forgotten in the excitement, "the authority of the President of the Confederate States of America."

Well, she had done it for weal or for woe. She had made her decision. Had it been a wise decision? Had she acted for the best? What interest had governed her, love for Thorne, love for her country, or love for her own peace of mind? It was in the hands of General Randolph now. The girl turned slowly away, unable to sustain the burning glances of her lover and the vindictive stare of Arrelsford.

"What is this?" said General Randolph. "Umph! A Major's Commission. In command of the Telegraph Department. Major Thorne, I congratulate you."

"That commission, General Randolph!" exclaimed Arrelsford, his voice rising, "let me explain how she——"

"That will do from you, sir," said the General, "you have made enough trouble as it is. I suppose you claim that this is a forgery, too——"

"Let me tell you, sir," persisted the Secret Service Agent.

"You have told me enough as it is. Sergeant, take him over to headquarters."

"Fall in there!" cried the Sergeant of the Guard. "Two of you take the prisoner. Forward, march!"

Two men seized Arrelsford, and the rest of them closed about him. To do the man justice, he made a violent struggle, and was only marched out at the point of the bayonet, protesting and crying:

"For God's sake, he's in the Yankee Secret Service! He'll send that despatch out. His brother brought in the signal tonight!"

All the way down the corridor he could be heard yelling and struggling. General Randolph paid not the slightest attention to him. He stepped over to the telegraph table beside which Thorne stood—and with all the force of which he was capable the young man could hardly control the trembling of his knees.

"Major Thorne," he said reprovingly as Thorne saluted him, "all this delay has been your own fault. If you had only had sense enough to mention this before we would have been saved a damned lot of trouble. There's your commission, sir." He handed it to Thorne, who saluted again as one in a dream. "Come, gentlemen," he said to his officers, "I can't understand why they have to be so cursed shy about their Secret Service orders! Lieutenant Foray?

"Yes, sir."

"Take your orders from Major Thorne."

"Yes, sir," returned Foray.

"Good-night," said the General, forgetful of the fact apparently that Edith Varney was still standing by the window.

"Good-night, sir," answered Thorne.

Foray moved over to the table at the right, while Thorne leaped to his former position, and his hand sought the key. At last he could send his message, there was nothing to prevent him or interrupt him now, he was in command. Could he get it thru? For a moment he forgot everything but that, as he clicked out the call again, but he had scarcely pressed the button when Edith Varney stepped to his side.

"Captain Thorne," she said in a low voice, giving him the old title.

He looked up at her, stopping a moment.

"What I have done gives you time to escape from Richmond," she continued.

"Escape!" whispered Thorne, clicking the key again. "Impossible!"

"Oh," said the girl, laying her hand on his arm, "you wouldn't do it—now!"

And again the man's fingers remained poised over the key as he stared at her.

"I gave it to you to—to save your life. I didn't think you'd use it for anything else. Oh! You wouldn't!"

Her voice in its low whisper was agonizing. If her face had been white before, what could be said of it now? In a flash Thorne saw all. She had been confident of his guilt, and she had sought to save his life because she loved him, and now because she loved her country she sought to save that, too.

The call sounded from the table. Thorne turned to it, bent over it, and listened. It was the call for the message. Then he turned to the woman. She looked at him; just one look. The kind of a look that Christ might have turned upon Peter after those denials when He saw him in the courtyard early on that bitter morning of betrayal. "I saved you," the girl's look seemed to say, "I redeemed you and now you betray me!" She spoke no words, words were useless between them. Everything had been said, everything had been done. She could only go. Never woman looked at man nor man looked at woman as these two at each other.

The woman turned, she could trust herself no further. She went blindly toward the door. The man followed her slowly, crushing the commission in his hand, and even as he went he heard the sound of the call behind him. He stopped half way between the door and the table and watched her go, and then he turned.

Lieutenant Foray understanding nothing of what had transpired, but hearing the call, had taken Thorne's place before the table. He had the despatch about which there had been so much trouble, and upon which the whole plan turned, in his hand before him.

"They are calling for that despatch, sir," he said as Thorne stared at him in agony. "What shall I do with it?"

"Send it," said the other hoarsely.

"Very good, sir," answered Foray, seating himself and taking hold of the key, but the first click of the sounder awakened Thorne to action.

"No, no!" he cried. "Stop!" He rushed forward and seized the despatch. "I won't do it!" he thundered. With his wounded hand and his well one he tore the despatch into fragments. "Revoke the order. Tell them it was a mistake instantly. I refuse to act under this commission."

CHAPTER XVI

The Tumult in Human Hearts

Of the many frightful nights in Richmond during the siege, that night was one of the worst. The comparative calmness of the earlier hours of repose of the quiet April evening gave way to pandemonium. The works at Petersburg, desperately held by the Confederates, were miles away from the city to the southward, but such was the tremendous nature of the cannonading that the shocking sounds seemed to be close at hand. Children cowered, women shuddered, and old men prayed as they thought of the furious onslaughts in the battle raging.

The Richmond streets were filled with people, mostly invalids, non-combatants, women and children. A tremendous attack was being launched by the besiegers somewhere, it was evident. Urgent messengers from General Lee called every reserve out of the garrison at Richmond, and the quiet streets and country highways awoke instantly to life. Such troops as could be spared moved to the front at the double-quick. Every car of the dilapidated railroad was pressed into service. Those who could not be transported by train went on horseback or afoot. The youngest boy and the oldest man alike shouldered their muskets, and with motley clothes, but with hearts aflame, marched to the sound of the cannon. The women, the sick, the wounded and invalid men and the children waited.

Morning would tell the tale. Into the city from which they marched, men and boys would come back; an army nearly as great as had gone forth, but an army halting, maimed, helpless, wounded, suffering, shot to pieces. They had seen it too often not to be able to forecast the scene absolutely. They knew with what heroic determination their veterans, under the great Lee, were fighting back the terrific attacks of their brothers in blue, under the grimly determined Grant. They could hear his great war-hammer ringing on their anvil, a hammer of men, an anvil of men. Plan or no plan, success or no success of some Secret Service operations, some vital point was being wrestled for in a death-grapple between two armies; and all the offensive capacities of the one and all the defensive resources of the other were meeting, as they had been meeting during the long years.

In a time like that, of public peril and public need, private and personal affairs ought to be forgotten, but it was not so. Love and hate, confidence and jealousy, faithfulness and disloyalty, self-sacrifice and revenge, were still in human hearts. And these feelings would put to shame even the passions engendered in the bloody battles of the fearful warfare.

Edith Varney, for instance, had gone out of the telegraph office assured that the sacrifice she had made for her lover had resulted in the betrayal of her country; that Thorne had had not even the common gratitude to accede to her request, altho she had saved his life, and, for the time being, his honor. Every cannon-shot, every crashing volley of musketry that came faintly or loudly across the hills, seemed pointed straight at her heart. For all she knew, the despatch had been sent, the cunningly devised scheme had been carried out, and into some undefended gap in the lines the Federal troops were pouring. The defence would crumble and the army would be cut in two; the city of Richmond would be taken, and the Confederacy would be lost.

And she had done it! Would she have done it if she had known? She had certainly expected to establish such a claim upon Thorne by her interposition that he could not disregard it. But if she had known positively that he would have done what she thought he did, would she have sent him to his death? She put the question to herself in agony. And she realized with flushes of shame and waves of contrition that she would not, could not have done this thing. She must have acted as she had, whatever was to come of it. Whatever he was, whatever he did, she loved that man. She need not tell him, she need tell no one, there could be no fruition to that love. She must hide it, bury it in her bosom if she could, but for weal or woe she loved him above everything else, and for all eternity.

Where was he now? Her interposition had been but for a few moments. The truth was certain to be discovered. There would be no ultimate escape possible for him. She heard shots on occasion nearer than Petersburg, in the city streets. What could they mean? Short, short would be his shrift if they caught him. Had they caught him? Certainly they must, if they had not. She realized with a thrill that she had given him an opportunity to escape and that he had refused it. The sending of that despatch had been more to him than life. Traitor, spy, Secret Service Agent—was there anything that could be said for him? At least he was faithful to his own idea of duty.

She had met Caroline Mitford waiting in the lower hall of the telegraph office, and the two, convoyed by old Martha, had come home together. Many curious glances had been thrown at them, but in these great movements that were toward, no one molested them. The younger girl had seen the agony in her friend's face. She had timidly sought to question her, but she had received no answer or no satisfaction to her queries. Refusing Caroline's proffered services when she reached home, Edith had gone straight to her own room and locked the door.

The affair had been irritating beyond expression to Mr. Arrelsford. It had taken him some time to establish his innocence and to get his release from General Randolph's custody. Meanwhile, everything that he had hoped to prevent had happened. To do him justice, he really loved Edith Varney, and the thought that her actions and her words had caused his own undoing and the failure of his carefully laid plans, filled him with bitterness, which he vented in increased animosity toward Thorne.

These were bitter moments to Mrs. Varney. She had become somewhat used to her husband being in the thick of things, but it was her boy now that was in the ranks. The noise of the cannon and the passing troops threw Howard into a fever of anxiety which was very bad for him.

And those were dreadful moments to Thorne. What had he done? He had risked everything, was ready to pay everything, would, indeed, be forced to do so in the end, and yet he had not done that which he had intended. Had he been false to his duty and to his country when he refused to send that telegram, being given the opportunity? He could not tell. The ethics of the question were beyond his present solution. The opportunity had come to him thru a piece of sublime self-sacrifice on the part of the woman, who, knowing him thoroly and understanding his plan and purpose, had yet perjured herself to save his life.

That life was hers, was it not? He had become her prisoner as much as if she had placed him under lock and key and held him without the possibility of communication with anyone. Her honor was involved. No, under the circumstances, he could not send the despatch. The Confederates would certainly kill him if they caught him, and if they did not, and by any providential chance he escaped, his honor would compel him to report the circumstances, the cause of his failure, to his own superiors. Would they court-martial him for not sending the despatch? Would they enter into his feelings, would they understand? Would the woman and her actions be considered by them as determining factors? Would his course be looked upon as justifiable? He could not flatter himself that anyone of these things would be so considered by any military court. There would be only two things which would influence his superiors in their judgment of him. Did he get a chance, and having it, did he use it?

The popular idea of a Secret Service Agent, a spy, was that he would stick at nothing. As such men were outside the pale of military brotherhood, so were they supposed to have a code of their own. Well, his code did not permit him to send the despatch when his power to send it had been procured in such a way. It was not so much love for the woman as it was honor—her honor, suddenly put into his keeping—that turned him from the key. When both honor and love were thrown into the scale, there was no possibility of any other action. He could not see any call of duty paramount to them.

He stood looking at Foray for a while, and then, without further command to that intensely surprised young man, or even a word of explanation, he seized his hat and coat and left the room. Foray was a keen-witted officer, he reviewed the situation briefly, and presently a great light dawned upon him. A certain admiration for Thorne developed in his breast, and as Allison opportunely came back at this juncture, he turned over the telegraph office to his subordinate, and in his turn went out on what he believed to be an exceedingly important errand.

Thorne found the streets full of people. He had not marked the beginning of the cannonading in the tumult of the office, but the lights, the bells pealing alarms from every church-steeple, the trampling of horses and men, and the roll of the gun-carriages appraised him of what was toward. Trusting that Thorne had been able to carry out his part, Grant had attacked the place indicated by "Plan 3" in heavy force.

What was Thorne to do? Obviously attempt to escape from Richmond, altho it would be a matter of extreme difficulty on account of the alarm which now aroused every section. He could not go, either, until he had seen his brother. He surmised that he was dead, but he could not know that; and he determined not to attempt to leave without making assurance doubly sure. It was a duty he owed to his brother, to his father in the Union Army, and to his superiors in the Federal Secret Service. If that brother were alive, he must be at the Varney house. He fancied that he would run as little chance of being observed in the excitement going in that direction as in any other, and he started to make his way there.

The fact that Edith was there influenced him also. Was the call of love and the living as great, or greater than the call of duty and the dying or the dead? Who shall say?

And the remote chance that he might be observed on the way was taken by his ever-vigilant enemy; for Arrelsford, upon obtaining his freedom, had sent the troops at the disposal of the Secret Service to hunt him down, and one of them caught sight of him. The shout of the observer appraised him of his discovery. He threw one glance behind him and then ran for his life. He had no especial hope of escaping, but he might get to the Varney house ahead of the soldiers, and he might see his brother, and he might see the woman he loved for a moment before he was taken and killed.

If it had not been for the two he would have stopped and given himself up. Somehow he did not care for life. His life was forfeit to the Federals and the Confederates alike. When she thought to save it, Edith Varney had doomed him. But he ran on and on, doubling and turning on his tracks; white-faced, desperate, his breath coming fainter, his heart beating faster, as he ran.

CHAPTER XVII

Wilfred Plays the Man

A sharp contrast to the noise outside was presented by the quiet Varney house inside. The sewing women, in view of the attack and the movements of the boys and the old men, had separated sooner than they had intended and had gone their several ways. Old Jonas, frightened to death, remained locked up in the closet where he had been left by Arrelsford's men. Martha was upstairs in Howard's room, making ready to watch over him during the night.

Caroline Mitford had not gone home. She had sent word that she intended to pass the night at the Varney house. Somehow she thought they seemed to need her. She was standing by one of the long front windows in the drawing-room, now a scene of much disorder because of the recent struggle. Tables were thrust aside out of their places, chairs were turned over, and there was a big dark spot on the carpet where Henry Dumont had poured out his life-blood unavailingly.

Caroline stared out of the window at the flashes of light. She listened, with heaving breast and throbbing heart, to the roar of the cannon and the rattle of musketry. She had heard both many times lately, but now it was different, for Wilfred was there. Mrs. Varney came upon her with her hand pressed against her breast, her face white and staring, tears brimming her eyes, but, as usual, Mrs. Varney was so engrossed with her own tremendous troubles that she had little thought for the girl.

"Caroline," she began anxiously, "tell me what happened. Edith won't speak to me. She has locked herself up in her room. What was it? Where has she been? What——"

"She was at the telegraph office," answered Caroline in a low voice.

"What did she do there? What happened there?"

"I am not sure."

"But try to tell me, dear."

"I would if I could, Mrs. Varney, but I was afraid and ran out and waited for her in the hall. The rest of them——" The girl broke off as the deep tones of the city bells clanged sharply above the diapason of artillery.

"It's the alarm bell," said Mrs. Varney.

"Yes," said Caroline, "they are calling out the last reserves."

"Yes; hark to the cannonading. Isn't it awful?" returned Mrs. Varney. "They must be making a terrible attack tonight. Lieutenant Maxwell was right; that quiet spell was a signal."

"There goes another battery of artillery," said Caroline, staring thru the window. "A man told us that they were sending them all over to Cemetery Hill. That's where the fighting is, Cemetery Hill."

"General Varney's Division is to the right of that position, or was the last time I heard from him," said Mrs. Varney anxiously.

(To be continued.)

Write Me Tonight

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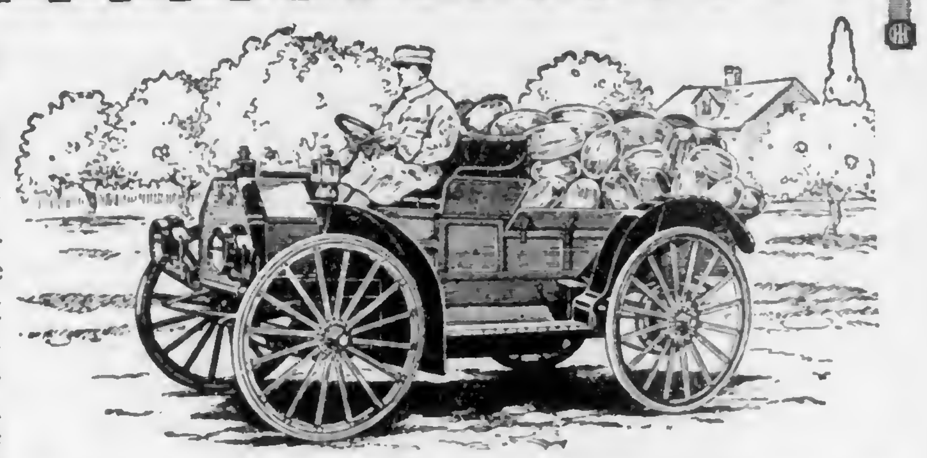

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WILLIAM GALLOWAY, Pres.

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Take a month to make up your mind—use the spreader all that time anyway you want to. Then, if you can't honestly say to me: "Galloway, your spreader is better than I ever thought a spreader could be and I don't see how I can get along without it"—if you can't say and mean every word just sent it back to me and I'll pay the freight *both* ways so you won't be out a cent.

If you want to keep it, I'll absolutely guarantee to save you $25 to $50 on the *very best spreader in the world.* That's why I say: "The Only Way is the Galloway". Selling direct from factory to farm, every middleman's profit cut entirely off; the actual net factory price with just one small profit added.

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Gentlemen: I received the spreader all O. K., and have it now nearly six months. I have never had any trouble with it at all and I like it very much. I would not be without one now for a great deal. My team [illegible] 2300 pounds and will handle it even on plowed ground. This morning I spread a load and there was two inches of snow on the ground, but the wheels did not slip, even without the mud lugs.
Yours truly,
Walter Ensign.
[illegible], N. Y.

Dear Sir: I received your wagon box spreader and am more than pleased; it does the work far better and is much easier on the team than I expected. My little mules handle it easily and they only weigh 900 lbs. The farmers come from all around to see it work and they all say they are going to have one of them.
Yours truly,
F. J. Robinson.
Narina, Okla.

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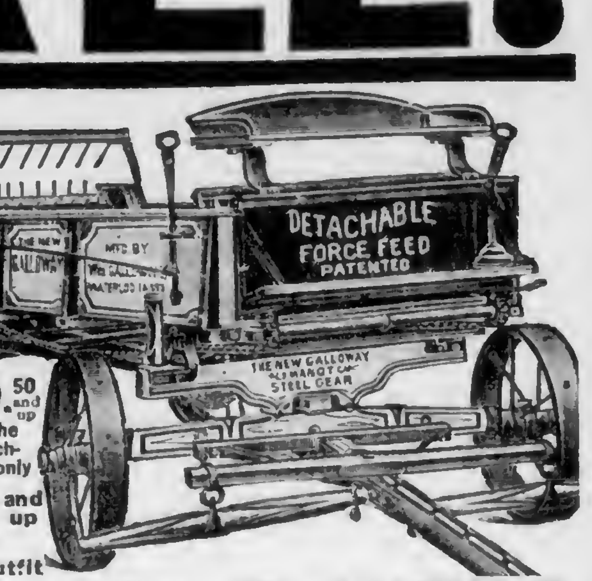

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Household

EARNING SPENDING MONEY

How a Country Girl Managed

I was thru school and wanted to earn money. I had a good home, plenty of food and clothes, but I enjoyed writing letters and appeared before my father every few days for a quarter or more for postage stamps. While he did not refuse to give me the money, I could see that he thought I was spending too much along this line. For this and other reasons, I wanted to earn my own spending money. An editor friend had asked me to write stories for our Sunday-school paper, and as I always enjoyed the pushing of a pen, I was writing these children's stories by the dozen, but receiving no pay. The thought came, why not turn my hobby into a money-making business?

About that time a representative of a daily paper in the city, four miles distant, asked me to act as county correspondent for our village. They furnished paper, envelopes and stamps and commenced to send the paper to me. They paid 50 cents a column, and all I needed to commence my money-making scheme was a lead pencil, for daily papers will accept copy made with pencil if it is a soft pencil and the mark is heavy. Ink is better, of course, and a typewriter better still. Well, I had my eyes open for all strangers in town and my ears open for all the news. I jotted down everything new and strange. I found plenty of pretty nature items. I wrote up weddings, all sorts of entertainments and even obituaries.

I made columns all right! The items had to be clipped, pasted together and taken or sent to the newspaper office for pay. Happy I was with the first money I received. I think I purchased dollars' worth of stamps. Father was relieved, and I felt wonderfully independent with this money-earning capacity. I had stamps to last, but I worked even more energetically at gathering news. The next time I appeared at the office I had yards and yards of clippings, and when the manager passed out the pay I had enough to travel from my home in southern New Jersey to visit a cousin in Boston. All that winter I acted as a special correspondent, writing up all my sight-seeing trips and the many interesting things to be found at "The Hub."

When I arrived home I was ambitious, indeed, for I begged of the rival daily to let me act as county correspondent for them, too. After working for both papers some time (altho it did not interfere with my home duties in the least), I found that the city editors were passing my best items along to the larger city papers. Upon inquiry I learned that the large city papers paid very much better rates per column for accepted material. I was not long in getting my name on some of the best of these. To the first check of $10 which came from one of these papers I added a few dollars more and purchased a second-hand camera, a 5x7, with a fine lens. Then it was not long before I felt that I was a full-fledged newspaper woman. It is an age of he who runs may read, and pictures are very valuable when they help tell a story.

My camera accompanied me on all pleasure expeditions. I had good luck from the first with my pictures. For a time I hired the developing and printing done in the city, but now every bit of the work is done in the home. I was soon making a very fair return from my efforts. The bank account which grew from this pen and camera business helped wonderfully when I married a poor but good man and we furnished a home according to our ideals.

In union there is strength. A typewriter has been added to the camera equipment, and we both find a great deal of pleasure in this kind of work. It is secondary to our daily duties, but in it we find a never-ending pleasure as well as profit. We never mar our evenings with this work; it is all done during our daylight pleasure hours. We have many magazines and papers and study their needs. Because a picture or brain product is not accepted at one place is no reason it will not be at another. As we used to write in our copy books:

There are many birds of many kinds,
And many men of many minds.

Time is a great factor in this line of work, getting the right thing at the right place at the right time. Since having a home of our own I do not do any hustling for the big dailies, but find comfort and luxury submitting to farm papers and magazines. Uncle Sam, thru the medium of postage stamps, does the selling. I never ask editors to buy, I simply submit the material with stamps for return. If it suits their fancy, they will buy and pay for it quickly enough.

I fear some writers make too hard work of it. They try too hard. Simplicity itself is what counts; be natural and be brief. Our back yard has furnished many a picture for magazine covers. There seems to be an endless market for good clear-cut photographs which will reproduce.—C. J. S.

ABOUT COLORING GOODS

By Hilda Richmond

So many mothers hesitate about attempting to dye goods because somebody they know has ruined valuable articles in this way. But really, all the cases of failure, when "run down," are found to be due to carelessness if a reliable dye is used. Of course, one must patronize a responsible druggist and take his word for the reliability of the firm making the dyes, but after that, success or failure lie with the worker. I have seen a 17-year-old girl turn a soiled white wool dress into a beautiful red one—that is, the ripped-up goods—but she followed the directions most minutely. She committed to memory the length of time needed and all the details, lest hunting for them on the paper might make her lose some valuable moment after beginning the work.

One reason people fail to color goods successfully is that they do not have the article perfectly clean. A little grease spot will cause the dye to fail to "take hold," and a little soil will leave a big spot when finished. If the dye is to sink in evenly, the goods must be clean and fresh. Being faded makes no difference, but grease and dirt are the rocks on which amateurs go to pieces.

Another thing that makes for failure is to try to dye goods on a day when some other occupation absorbs the mind. Dyeing should only be done when the mind is perfectly free from other thoughts, and when the worker can give all the time necessary to the task. Many ladies try to fit coloring goods in with washing, ironing, baking or other jobs, and so fail. Still another trouble is in trying to stretch the dye over a larger amount of goods than the directions call for. If it says for four pounds, there seems to be no danger in slipping in four and one-half or five, or in taking the dye after the first four pounds are finished and trying to color something else. Many ladies ruin valuable material in this way.

It takes patience and care to color any kind of fabric, but it pays. Rugs, new garments out of old ones, curtains and dozens of other articles have been transformed by this simple process, simple for the woman who will follow instructions implicitly. And it is a great source of economy in many homes. Personally, I like the old-fashioned home dyes, made of walnut hulls and butternut hulls for a rich soft brown, but the store dyes must be used for other colors. Many a penny has been saved by changing the color of a fabric, and children who get tired of one color will enjoy "new" things made over when they take on a different hue quite as much as entirely new clothes.

To Quiet a Restless Baby.—A crying baby is usually an uncomfortable one. Assure yourself that he does not suffer from hunger, thirst, dampness or improper arrangement of clothing. Then, if he cries, alter his position. Doubtless, babies tire, as would we, of constantly lying on the back. Do not neglect to give water often. Milk is a food, and can not take the place of water. If baby is restless at night, a warm bath at bed time will usually produce sleep. If necessary to repeat, do so at the same time every night until regular habits of sleep are acquired.

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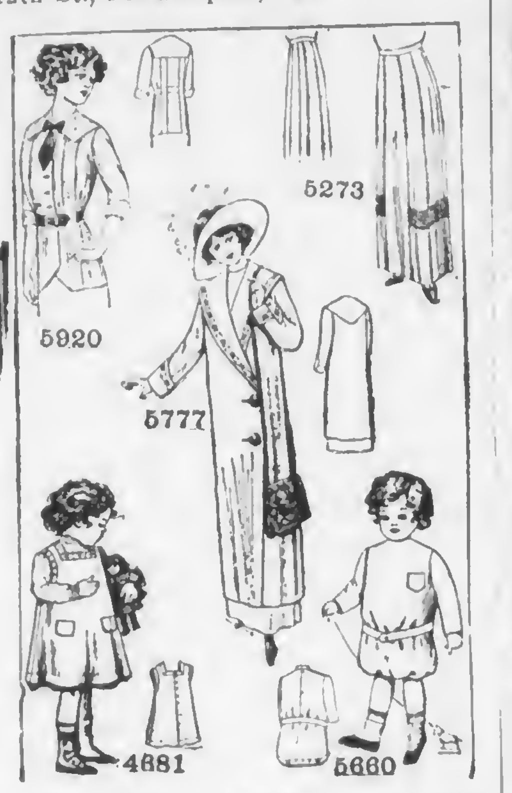
Be sure to give the figures and letters of each pattern exactly as printed at the beginning of each description. We will not be responsible for correct filling of your orders unless you do so. Also give bust measure when ordering waist patterns, waist measure for skirt and age for children's patterns. Address Pennsylvania Farmer, 214-18 So. 12th St., Philadelphia, Pa.



5920—Ladies' and Misses' Norfolk Blouse.—Cut in 6 sizes, 30 to 40 inches, bust measure. Size 36 requires 3½ yards of 36-inch goods; ½ yard of 18-inch all-over. Price of pattern, 10 cents.

5777—Ladies' 54-inch Length Coat.—Sizes 32, 36, 40 and 44 inches, bust measure. Size 36 requires 5½ yards of 44-inch material; 3½ yards of braid. Price, 10 cents.

4681—Children's One-Piece Apron.—Six sizes, 2 to 12 years. For 8 years it requires 1¾ yards 36 inches wide; 2⅛ yards insertion. Price, 10 cents.

5660—Children's Rompers.—Easy to make. Cut in sizes 1, 2 and 3 years. Age 2 requires 2⅛ yards of 27, or 1¾ yards of 36-inch material. Price, 10 cents.

5273—Ladies' 14-gored Skirt.—Six sizes, 22 to 32 inches, waist measure. Size 24 measures 3 yards around lower edge, and needs 3¾ yards, 44 inches wide. Price, 10 cents.

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Anty Drudge Decries Home Soap Making

Mrs. Oldtimer—"Anty Drudge, I remember you used to have a good recipe for making hard soap with lye. I don't like my soap recipe; will you tell me yours?"

Anty Drudge—"Mercy on us, woman, I haven't used a soap recipe for a long time, and I forget what it was. I use Fels-Naptha Soap. You can't make a soap as good as Fels-Naptha Soap, and you can't find anything to do the work as well as that does."

Don't let your husband talk about his farm, his horses or his cows. You are his partner, and very likely the farm would not be his if it wasn't for the work you do. Have you ever stopped to think of ways in which you can save your strength and yet do as much work as you do now? If not, it's time you did.

Do you use Fels-Naptha Soap? With Fels-Naptha Soap you do better work in cool or lukewarm water than in the old way with wash boiler and a hot fire, and the clothes are much cleaner and whiter, without having to be rubbed to pieces.

Covered by the Red and Green Wrapper. Made in Philadelphia

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OR PAIN KILLER FOR THE HUMAN BODY
Gombault's Caustic Balsam
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REMOVES THE SORENESS—STRENGTHENS MUSCLES
Cornhill, Tex.—"One bottle Caustic Balsam did my rheumatism more good than $120.00 paid in doctor's bills." OTTO A. BEYER.
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The LAWRENCE-WILLIAMS COMPANY, Cleveland, O.

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SHEEP WIZARD BRAND MANURE
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No Weeds No Waste — Economical and Convenient
One Bag Equals Whole Wagon Load of Barn Yard Manure
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Brigham's Latest Improved Shoe for working horses on swamp land. This one shoe is adjustable to suit the size and shape of any horse's foot. Patented and manufactured by L. Brigham, Decatur, Mich. Send for circular.

Veterinary

(Conducted by W. C. Fair, V. S.)

(Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also name and address of writer. Initials only will be published. When reply by mail is requested, it becomes private practice, and a fee of $1 must accompany the letter. This is one of the most valuable columns of the paper and we invite readers to make use of it. Clippings from this column, when properly preserved and classified, would make one of the most valuable medical symposiums a farmer-stockman could obtain.)

Bog Spavin.—I have a 2-year-old colt that has soft bunch in front part of both hock joints. One of these bunches is a little sore when pressed, but causes no lameness. W. M., Burnt Cabns, Pa.—Clip hair off and apply equal parts tincture iodine and spirits of camphor; or apply 1 part powdered cantharides and 8 parts lard, 3 times a month. In order to obtain permanent results, you should keep up this treatment.

Preventing Azoturia.—I have a 6-year-old mare that has had two different attacks of azoturia. I would like to know how it can be prevented. Can you give me a prescription and have the medicine given in feed? The mare is a valuable one and I am afraid of another attack. J. E. S., Green Castle, Pa.—The principal exciting cause of azoturia is feeding too much grain and failing to exercise them. Breathing foul air and being housed in a filthy stable is another cause. Keeping a horse too fleshy is another cause. An idle horse should seldom be fed more than one-third as much grain as when working. Giving a work horse one or two days' rest, then starting to work him is more apt to bring it on than if he stood idle for two or three weeks, or longer. It is also very important to keep the kidneys and bowels active when the animal is idle; however, it is always good practice to exercise heavy draft horses daily. Give 1 oz. cooking soda at a dose in feed, 3 times daily.

Nasal Catarrh—Poll-evil.—I have an 8-year-old horse that discharges from eyes and nose, has dry cough. He also has quite a bunch on upper part of neck, near ears. This horse has been ailing for the past 8 weeks. How may I cure him? F. W. M., Cambridge Springs, Pa.—Your horse suffers from nasal catarrh; besides, he has perhaps bruised upper part of neck, causing swelling you mention, which may result in abscess. The catarrhal trouble is perhaps the result of taking cold. Mix together equal parts powdered nitrate potash, ground gentian, ginger, nux vomica and salt, and give him a tablespoonful at a dose in soft feed, 3 times a day. Apply 1 part iodine and 10 parts fresh lard to poll once every day or two until the swelling either scatters or opens.

Lymphangitis.—I bought a horse that had a swollen leg. The man I bought him of caled it "milk leg." The swelling extends from hoof to hock. I am unable to state how long the leg has been in this condition. Would like to know the remedy for an ailment of this kind. F. B. C., Quarryville, Pa.—Chronic lymphangitis is an incurable ailment, so far as reducing leg to its normal size; however, you will obtain some results by giving 2 dr. potassium iodide at a dose in feed or water, three times a day. Also bandage the leg in cotton, but avoid applying bandage too tight.

Torpid Liver.—I have 2 Jersey cows that eat and milk well, but are thin and rough coated. Whenever these cows are out doors and the weather is cold, they seem to chill easily and tremble a great deal. I would like also to know what to give horses and cows that will aid me in putting them in good condition. A. W. K., Scotland, Pa.—First of all, bear in mind that for an animal to lay on flesh and grow they should be fed all the nutritious feed they will eat; besides, they should be kept in a clean, comfortable, well-ventilated stable. It is also important to supply them liberally with good water whenever they crave it. Give each cow or horse 1 dr. ground nux vomica, 1 oz. ground gentian, ½ oz. ground cinchona and ½ oz. bicarbonate soda at a dose in feed, 2 or 3 times a day.

COUNTY NOTES

Carbon Co., Pa. (E. C.), Feb. 10.—Weather mild, with much rain; first week of February zero temperatures. Live stock generally in thrifty condition. Mixed hay and timothy, $18@20; potatoes, 60@65c, wholesale; eggs, 35c. Considerable plowing done during January. Orchards show gradual improvement, due to spraying and more thoro culture. Farmers' institutes are not very generally attended here.—Brice Brenckman.

Ocean Co., N. J. (C.), Feb. 8.—Cold past week. Fresh cows bring $50. Hay is cheaper. Good hay, $16. Price of corn keeps about same. Eggs, 24c; butter, 35c; poultry, 17c, with very little offered for sale. A few hogs and shoates to be slaughtered during this month. Getting ice now is the main work for a few days. Work is little ahead of most seasons. Grain and grass in fair condition.—C. M. Rerer.

Putnam Co., N. Y. (S. E.), Feb. 10.—Weather cold. Occasional snow storm. No zero weather as yet. Butter, 35c lb.; fresh country eggs, 35c doz.; potatoes, $2.50 bbl.; apples, $2.50 bbl.; Hay, $24 ton. Farmers busy cutting and drawing logs to mill. Ice famine is feared. Good sleighing. Farmers' institute held here on February 4th.—Wm. Seims.

Armstrong Co., Pa. (S. W.), Feb. 10.—Weather cold, clear and windy. Temperature 16 above. Cattle plentiful. Cattle, 6@8c lb.; hogs, 10c, dressed; horses scarce and dear. Hay plentiful. No. 1 timothy, $16 ton; mixed, $15. Corn poor grade. Potatoes, 90c@$1 bu. Work advancing slowly. The greater amount of farmers are hauling pit post; they are worth 10c apiece.—Arthur Allshouse.

Harford Co., Md. (N. E.), Feb. 8.—Slight cold wave; some ice; no sleighing. Live stock in fair demand. Horses and mules high, selling from $175 to $250 each; hogs, 6½@7c lb.; calves, 9@10c; chickens, young, 15c; old, 14c; clover seed, home raised, $8@10 bu. Several fields of wheat badly damaged by fly. Much plowing done, owing to the open winter. Farmers have been busy hauling manure, trimming orchards, cutting wood, etc. Some few ice houses filled, with 3½ and 4-inch ice.—D. G. Harry.

Sullivan Co., Pa. (N. C.), Feb. 10.—Weather much colder, with but very little snow. Live stock in fair condition. Veal calves selling at 8@8½c lb.; butter, 22@24c; eggs, 22c. Everyone seems to mind the sudden cold spell. Farmers are hauling coal and getting up summer's wood. Scarcely any manure hauled out yet. Roads are getting worn down smooth, but have been in very bad condition. Animals all feeling cold spell.—Geo. G. Junk.

Venango Co., Pa. (N. W.), Feb. 7.—January warm; much rain, followed by frosts. Live stock lookink well. Very little stock changing hands. Heavy rains, followed by hard freezing, without snow; has been severe on crops. Pork, 10c lb.; beef, 10c; potatoes, 70c bu.; apples, 75c; eggs, 30c; butter, 35c. Hauling lime and manure and doing chores is about all the farm work being done. General conditions not so good as last month.—W. J. Pringle.

Huntingdon Co., Pa. (C.), Feb. 10.—Weather very mild prior to ground hog day; since then, cold and blustry. Live stock has wintered well this far, and plenty of feed for the rest of the winter. Prices good. Hogs, 9c; beef cattle, dressed, 10@12c; sheep, 4½c; chickens, 12c; wheat, $1; corn, 65c; potatoes, 65c; oats, 40c; hay, $15@18; lard, 18c; eggs, 22c; butter, 30c. Much plowing done before the ground froze up. Ice harvest now on. Ice is about 7 inches thick.—Clair L. Harnish.

Lancaster Co., Pa. (S. E.), Feb. 6.—Exceptionally mild weather thru February, accompanied by much rain and bad roads. The venerable ground hog brought colder weather for February, with a few inches of snow. Live stock in good condition. Fat hogs, 8@8½c. Pigs and shoats bring good prices. Stock bulls are high. Wheat, $1.03; corn, 55c; oats, 37c; hay, $16@18; straw, $9@10; butter, 35c; eggs, 24c. Winter wheat looks good. Farmers are not busy, excepting those that have tobacco to strip. Many farmers have delivered their crops. Quite a few have not yet sold.—J. Henry Haverstick.

Dauphin Co., Pa. (C.), Feb. 5.—Warmest January in many years; lowest temperature about 20 degrees. Farmers declare that wheat grew some during the month. Colder now; lowest about 15 degrees. Farmers are hauling lime for spring crops. Hay, $15; corn, 50c; wheat, $1; potatoes, 65c; apples, $1; eggs, 20c; butter, 30@35c.—F. E. Irwin.

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PENNSYLVANIA FARMER
AGRICULTURE THE KEYSTONE OF NATIONAL PROSPERITY
ESTABLISHED 1880
PUBLISHED WEEKLY
VOL. 33.—No. 9.
PHILADELPHIA, PA., SATURDAY, MARCH 1, 1913.
50 CENTS A YEAR.

Headle Dr. T J c813
Rutgers College

Clover as a Soil Builder---By W. Milton Kelly,

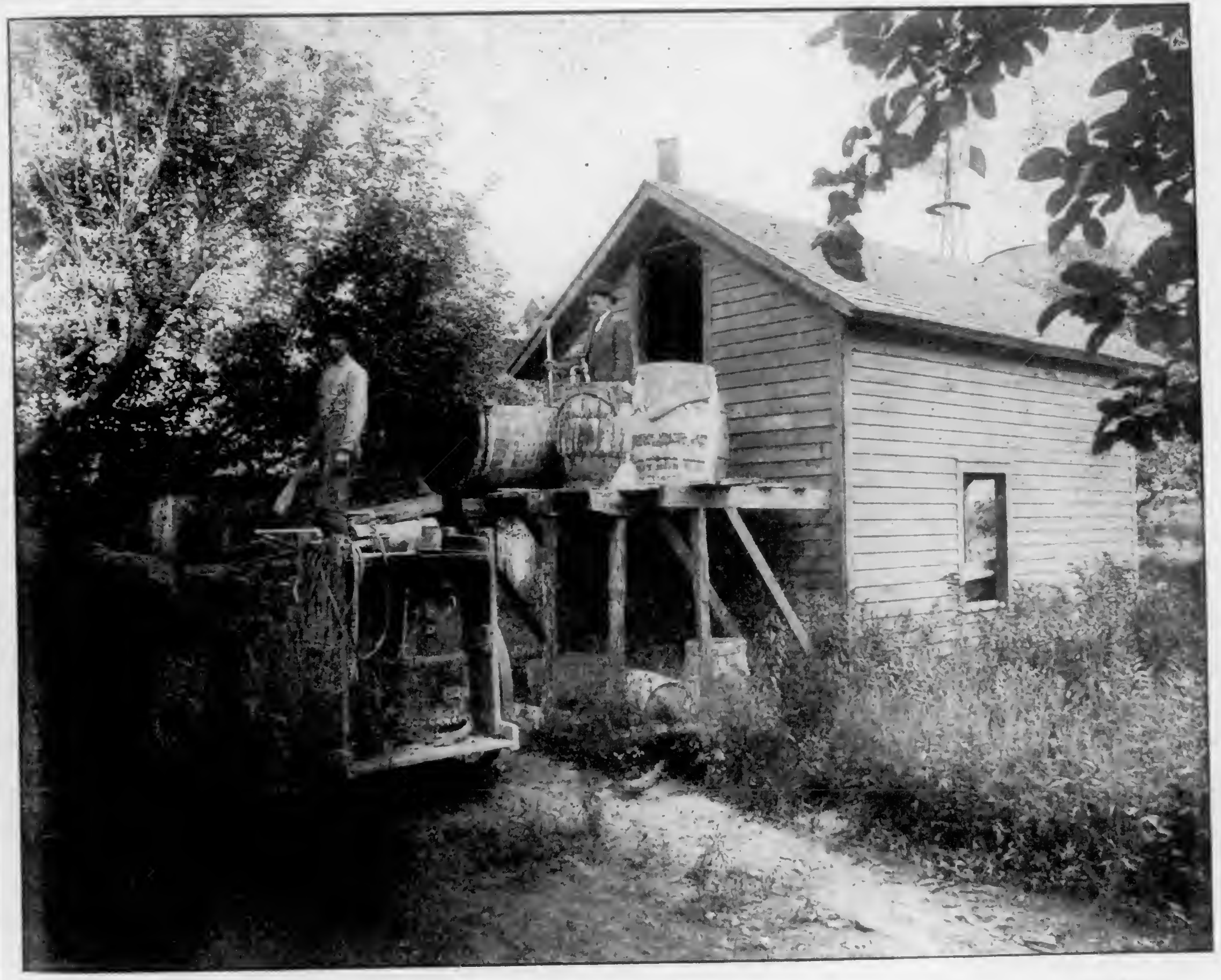
Erie County, N. Y.

As a source of feed and fertility clover is Nature's choicest gift to man. It is the mother of the crop rotation, not only furnishes palatable and nutritious pasture and forage for our herds and flocks, but her active life is spent in gathering nitrogen, potassium and phosphorus for the plants that follow her in the rotation. Her history is intertwined with that of profitable agriculture; her future is as secure as the farmer's. A marvelous alchemy is it that gathers plant food from the subsoil and atmosphere and deposits it within reach of the roots of plants which do not possess this almost supernatural power. We are not only largely dependent on clover, but we must have more of it, if we are to maintain profitable and efficient systems of agriculture.

Lack of understanding of the essentials of clover growing and its relation to other crops that are grown in the rotation has, in many localities and at many times brought the crop much unwarranted criticism. The truth of the matter is that clover, instead of being, as has been somewhat generally asserted, a difficult crop to grow, is, when properly understood and managed, one of the easiest. Case after case is coming to our attention where men have succeeded in building up and reclaiming farmed-out and unproductive soil, chiefly by the use of clover in the crop rotation.

It is difficult to convince some men that clover has the power of appropriating nitrogen from the atmosphere and depositing it in the soil, however, the soil bacteriologists have shown us how it is accomplished, and practical field experiments substantiate the fact. This puts it squarely up to the farmer to learn how to grow this crop and derive the greatest benefit from its peculiar ability to add to the supply of nitrogen in the soil—how to use it to build up the soil and benefit the other crops grown in the rotation.

The possibilities of increasing crop production thru the growing of clover will depend upon soil conditions, the knowledge of the farmer and the rotation of crops practiced. There are thousands of acres of naturally productive soil in the great clover-growing sections which, under present conditions of soil management, will not produce clover. Clover is not entirely a success on more than one-third of the farms upon which it is grown. These statements may seem overdrawn to some who are unacquainted with the conditions thruout the Eastern and Middle Western States, but they are nevertheless true. Something is entirely out of balance in any system of agriculture under which the clover crop fails. Land that has failed to produce clover



A GOOD STORAGE HOUSE FOR SPRAYING MATERIALS. THE SPRAY TANK IS FILLED BY GRAVITY, THUS SAVING MUCH LABOR.
(See Article on Spraying, Page 3.)

after repeated trials, and fields where only half a crop is the average yield, should be put in condition to produce this much-needed crop.

On some soils a number of conditions must be met to grow clover successfully, while on others only one or two must be overcome. The plants will thrive upon a wide variety of soils as regards texture and composition, but the best results are obtained on deep, mellow and fairly retentive soils which are properly drained. Clovers will absolutely fail if there is any considerable amount of free acid in the soil, or, in the language of the farm, if the soil is "sour."

Before incurring any considerable expense for correcting the acidity, one should make a careful test for himself. If the soil is supposed to be sour, plow two small plots, each containing about one square rod, situated in a representative portion of the field. Give one an application of about 20 pounds of lime, working it in deeply and thoroly, then fertilize or manure both of the plots alike and plant table beets. If the soil is sour, the beets will grow much better on the plot that has been limed, and it is safe to conclude that lime will be essential in securing a good stand of clover.

When lime is used to encourage the growth of clover the time for applying it will depend upon the soil conditions and systems of rotation practiced, yet usually it had best be applied in the fall, especially if caustic or slaked lime is used. If carbonate of lime is used it may go on in the spring with less danger of injury to the seed of the crop than when either of the two forms mentioned above are used. When it is applied in the fall ample time is allowed for it to become mixed with the soil before spring, especially if it is put in properly. The carbonate of lime acts less energetically and quickly than the caustic and slaked forms. As a general rule, it should be spread broadcast and thoroly worked into the soil. The quantity of slaked lime required to an acre varies with different soils and conditions. Usually, however ,the amount necessary will vary between 1,000 and 3,000 pounds an acre, or its equivalent in some other form. Lime should never be mixed with other fertilizing material before applying it.

The best organic matter that may be used to start clover on land that is in a farmed-out condition is barnyard manure. However, the writer would nevertheless urge that manure alone be not employed to enrich clover land. The leading and most valuable element in the manure is nitrogen. The application of this in too large quantities is unnecessary. If clovers are grown on manure they will feed upon the nitrogen in the manure, and will not draw upon the atmosphere for that element. Light dressings of manure, supplemented with some form of fertilizer carrying considerable phosphorus and potassium can be made to cover more acres with manure and supply a more properly balanced plant food for the clover crop.

We should keep in mind that the more nitrogen the clover plant can gather from the atmosphere and deposit in the roots and stubble the better. In a certain sense, this added nitrogen is clear gain. In considering this point we must keep in mind that the clover plant, like other plants, must take different food elements in certain fixed proportions. Tho their supply of nitrogen is inexhaustible, they can not make a satisfactory growth unless provided with plenty of the elements which they must take from the soil. Therefore, it is clearly unwise to lessen our chances for gathering this valuable element, nitrogen, from the air thru failure to supply the mineral elements in adequate proportions. The rule, then, in fertilizing for clover should be to supply phosphorus, potassium and lime in readily available forms, so that the clover plants can do their most efficient work at nitrogen fixation. With plenty of these elements and a soil that will supply the needed moisture at critical times, large crops of clover may be produced.

By adopting a suitable rotation of crops we may not only secure nitrogen—the most expensive of plant food—from the atmosphere, but we may also maintain a sufficient supply of organic matter. The maintaining of a sufficient supply of organic matter in the soil is just as important as obtaining nitrogen from the air. The organic matter furnishes the principal food for the bacteria, and if the soil is well filled with it they increase in number on account of having an abundance of food and suitable conditions for their growth and development. The bacteria attack directly and indirectly the mineral and nitrogenous compounds in the soils and make them into an available form. Without these little helpers, the process of decay which restores the elements of fertility to the round of Nature would be interrupted, the foods locked up in the tissues of plants and animals could not be used again by plants. The processes of Nature are such that the same material is repeatedly used, passing in an endless cycle from plant to plant, or from plant to animal and back again to plant, but always with the intervention of bacteria. We can, therefore, readily understand why bacteria play an important part in soil fertility.

The fact that clover furnishes nitrogen and organic matter for succeeding crops is pretty generally understood among the better class of farmers. That timothy and other grasses grown in the fields with clovers will derive great benefit from the clovers is not so generally understood. That such is the case, however, we have ample proof. It may be of interest to consider how this effect is produced. Clover is short lived. It remains in meadows a number of years, because some of the plants invariably ripen seed before the hay crop is harvested. Large numbers of clover plants die each year, and their decomposition leaves plant food within easy reach of the grasses which thrive where nitrogen is available. If the meadow is brought into condition to produce clovers the first year, it will also be in condition to yield good crops of timothy and other grasses the next year.

In seeding clover it is many times advisable to mix it with some of the grasses, usually timothy, and allow the mixed hay crop to occupy the ground two years or longer, especially if a cultivated crop is grown in the rotation. Clover is a more active factor in building up the soil, being more quick in its returns, yet not giving us as substantial base of humus for so long a period. In this way we may have a place for the farm manures where they may be used to help grow more manurial substances to plow under instead of being largely used up by the first cultivated crop. Manure applied to new seeding insures a big crop of hay which, if fed out to live stock on the farm, adds greatly to the supply of farm manure. If it is our real aim to make the clover crop do its most efficient work for us we must make the conditions favorable for its growth and make the most economical use of the nitrogen it adds to the soil. The larger crops of clover or mixed hay we harvest, the more nitrogen and humus-making material go back to the soil in the roots and stubble of the crops.

For many years we plowed our clover sod after cutting one crop of hay, but I can see our mistake now. The high price of clover seed, and the unexpected and unavoidable factors, such as unfavorable seasons, the scarcity of farm help and the uncertainty of the new seeding coming thru the winter in good shape have convinced me that it is better to keep a portion of my land in older mowings, and not confine myself to the short system of rotation advocated by agricultural leaders; and each year is proving the wisdom of this system of managing clover on my farms.

One of the reasons why so many farmers fail to see any good in the timothy crop for building up the soil is the fact that they have been lectured to over and over again that only leguminous plants added any nitrogen to the soil. Of course, they are the best, but, again, there are millions of bacteria waiting to seize upon any root or stem, anything organic, to make nitrogen for another plant. This may explain why a thick, heavy sod has so much greater value to the crops grown in the rotation, rather than stimulating one crop and leaving the soil depleted of organic matter.

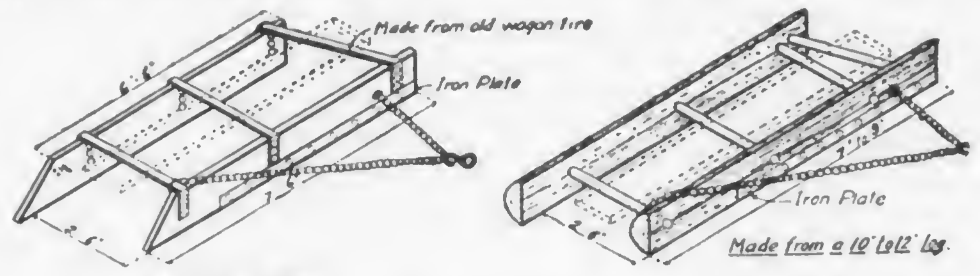
AN EXPERIMENT IN ROAD DRAGGING

The Office of Public Roads of the Department of Agriculture has been making experiments on an 8-mile stretch of road in Virginia to demonstrate the results that may be obtained on country earth roads by continuous work under a patrol system. A patrolman was employed to furnish a horse, cart, and small tools, and he was supplied with a road drag built of plank and required to furnish two horses to drag the road whenever it was in suitable condition for dragging, usually following each rain.

The entire 8 miles of road is well traveled and there is considerable heavy teaming over parts of it. The United States cavalry stationed at Fort Myer frequently passes over a portion, and batteries of artillery also use the road at intervals. A traffic census for three days last March showed the following daily average of teams traveling over the road: Loaded one-horse wagons, 15; unloaded one-horse wagons, 58; loaded two-horse wagons, 38; unloaded two-horse wagons, 49; loaded four-horse wagons, 9; unloaded four-horse wagons, 4; saddle horses, 96; and motor runabouts, 1.

The patrolman was paid $60 a month and $1 a day extra whenever he used two horses to drag the road. His presence was required on the road from 8 A. M. until 4.30 P. M., with one-half hour allowed for lunch. The average cost of dragging last year was $16.11 per mile for 6½ months, which is at the rate of $29.74 a mile for the first year of 24 draggings, or approximately $1.25 per mile for each dragging of three round trips.

The use of the road drag has greatly improved the daily condition of the road, and rendered it smooth and comfortable for travel for a greatly increased number of days in bad weather. The department expects to continue the experiment this year, for it is already apparent that the entire 8 miles of road will show remarkable improvement under the systematic work of the patrolman.



THE DRAG USED IN GOVERNMENT TESTS

CULTIVATION

We all know that cultivation conserves soil moisture, and that incidentally it kills weeds. We do not think so often, however, of its influence upon the direction of root growth. For instance, in the case of a light, loamy soil, which has not been plowed deeper than four inches. Suppose there are frequent spring rains, which are not heavy enough at any one time to soak the soil deeply; the seed comes up readily and begins growing; the grower, on account of the rush of other work, neglects cultivation. The soil, yet mealy from the early plowing and the gentle showers, appears not greatly in need of it and as yet there are no weeds. The plants are growing well, but if we could see beneath the surface, we would find that with every need so well satisfied within easy reach the little rootlets are spreading out just a little below the surface.

But conditions change. The rains become infrequent, the sun shines warm upon the surface and the winds dry out the surface of the soil. Deep down beneath the surface is moisture enough to support the crop, but between the sub-strata of moist soil and the rapidly drying surface and region of the roots is a layer of earth that is dry and somewhat hardened. The rootlets can not get thru to the life sustaining region below. Unless relief comes quickly in the form of rain, the plants must wither and die.

Now, suppose that cultivation had begun while the plants were yet getting plenty of rain. The loose soil would have taken in the water to a greater depth and retarded its evaporation, there would have been a moist stratum within the reach of the roots toward which they would naturally grow in the drouth emergency. Hence, early cultivation tends to deeper rooting.

Usually, cultivation may be continued later where it was begun early. Indifferent, irregular cultivation early usually makes the plants vulnerable to injurious root cutting later when they have attained any size. The early cultivation tends to prune the surface roots gently and without shock to the plants.

This matter of root-pruning is an advantage with plants such as the asparagus, which should send its roots downward to make it drouth resistant and prevent heaving from frost.

With the annual farm crops, however, there comes a time when the roots are massed and run thru the soil in every direction. The plant is making its greatest demand for food, moisture and room. It has attained its fullest development and is ready to mature its fruit and finish its work. Every part of its root system is vital to this work, and a loss of any entails loss in yield. Before this deep cultivation must stop. Corn, tomatoes, cucumbers, melons, potatoes, etc., may be ruined as to yield by cultivating past a certain point.—W. R. Conover, Monmouth Co., N. J.

RURAL BANKING AND CREDITS

I must confess that I have little confidence in any rural banking scheme established by state or federal action. It is useless to try to help people who will not help themselves. The mutual banking and credit systems of Germany, France and Ireland were established by the farmer. Their respective governments may have assisted them by enacting such legislation as they deemed necessary, but their governments, altho more paternalistic than ours, did not do things for them which they could do for themselves. Nor did these farmers attempt to borrow money from city banks. They combined their savings and respective credits to assist the individual farmer in his efforts to carry out projects which had been submitted to and approved by a board of directors representing the best agricultural thought of their association or community. This board of directors, composed of practical farmers, not only knew agricultural conditions in a general way, but they knew every field of the borrower's farm as well as the borrower himself.

An application for a loan meant a personal visit by a committee of this board of directors and a very careful discussion of the questions: "What do you want the money for?" and "How do you expect to pay it back?" If the loan was made it had to be spent according to agreement. If it was not made, the applicant at least knew that he was pursuing methods which were not approved by the most successful farmers of his neighborhood. He was free to do as he pleased, but he was not free to do it with other people's money. This agricultural credit system abroad is thus a magnificent application of the modern system of co-operation, for this co-operative banking not only had an immense educational influence, but it soon led to co-operative buying and co-operative selling.

The model of these farmers' co-operative banking and credit organizations must be sought in the mutual building and loan associations so popular in some of our cities. No American farmer will pledge his entire property and credit as security for any mutual banking scheme, as is done by the farmers of France and Germany. But he will deposit his weekly or monthly savings in such an association, especially if it is understood that he can not be a borrower unless he is a depositor. He will also pledge sufficient of his property to secure his loan to the association. He will make every effort to meet his obligations by regularly depositing the prescribed amount with the treasurer of the association in order to free his property thus pledged. He will not hesitate to ask for a loan, for being a depositor he has a certain right to borrow whenever he needs capital for necessary improvements. Besides, he is borrowing from people who understand his needs and are interested in helping him make his payments, even if sickness, crop failures or any other unavoidable misfortune should make it difficult for him to do so.

Again, it is practically impossible that the directors of such an association should show favoritism in granting loans, or that they should make ill-advised loans. Their every transaction is public and subject to criticism by every shareholding depositor. The office of director is a position of honor, and no man in that position is going to jeopardize his standing among his

friends and neighbors thru any transaction which might meet with their disapproval or outrage their sense of right and American love of fair play.

In their relation to the general banking interests of the country these farmers' mutual saving and loan associations are likely to repeat the experience of the city "Bau-Verein," or "Building Association." Our city banks eagerly bid for their deposits and their business. Their credit is of the highest, for every loan they make is sanctioned only after a more rigid examination than any bank can afford to make and secured by the very best property of a given neighborhood. Their interest charges are so fixed as to pay the rates paid on deposit by savings banks plus all expenses of administration. In Baltimore, for instance, they usually meet every Monday evening, and some of them handle thousands of dollars at every meeting.

I have seen 50 people, Germans, Italians, Poles and Greeks, men, women and children, standing in line awaiting their turn to walk up to the table, around which the directors of such an association were seated, and transact their business. They saw the people they were entrusting with their hard-earned money and every one of them was personally known to the directors. The result was mutual confidence and trust, the foundation stone of all business. It is therefore not at all strange that our city banks should bid against each other for the deposits and business of these associations.

These same banks will absolutely refuse to make a loan on any farm property, even tho it be a much safer risk than many of those they take in town. The cost of looking after such farm loans, the difficulty of proper control, makes it impossible for them to do so. But I have not the slightest doubt that the business of a properly organized and incorporated Farmers' Mutual Savings and Loan Association, which could show deposits amounting to $10,000 loaned out upon property which was constantly growing in value by reason of its increased fertility and productiveness, would be just as eagerly sought by our banks as the business of the city building associations. It would be a much safer proposition than Kansas and Nebraska farm mortgages were some years ago, and if our western farmers continue their wasteful methods of soil exploitation, it is apt to be a safer proposition in the future.

I therefore see no need whatever for paternalistic governmental action in this matter. Surely, the American farmers who organized the grange, built their own grain elevators in opposition to railroad monopoly, established fruit and produce exchanges, have just as much initiative and business sense as the people of our cities who organized these associations to enable them to build and pay for their little homes out of their weekly wages. All that is required is the study of these city associations by some of our agricultural leaders; the application of their principles and methods to the farmers' needs; the publication of a model plan for organization and incorporation, together with a little push on the part of a few groups of farmers, who have opportunities similar to those presented by many of our eastern sections.

Whatever is done must be straight business—no secrecy, no politics, no social features, no lectures, no ice-cream and cake—but just plain every-day banking.—The Country Parson.

POULTRY MANURE FOR POTATOES

For a number of years I have used manure from the poultry house for potatoes with better results than I got from any other farm manure or fertilizer. I made tests several times with the manure and with different kinds of fertilizer, and always got best results from the poultry manure. Last year I mixed poultry manure and acid phosphate. I used from 10 to 15 pounds of 16 percent acid phosphate to the barrel of hen manure, and put a single handful of the mixture to each hill of potatoes, with the result that I grew better potatoes than I ever had grown before.

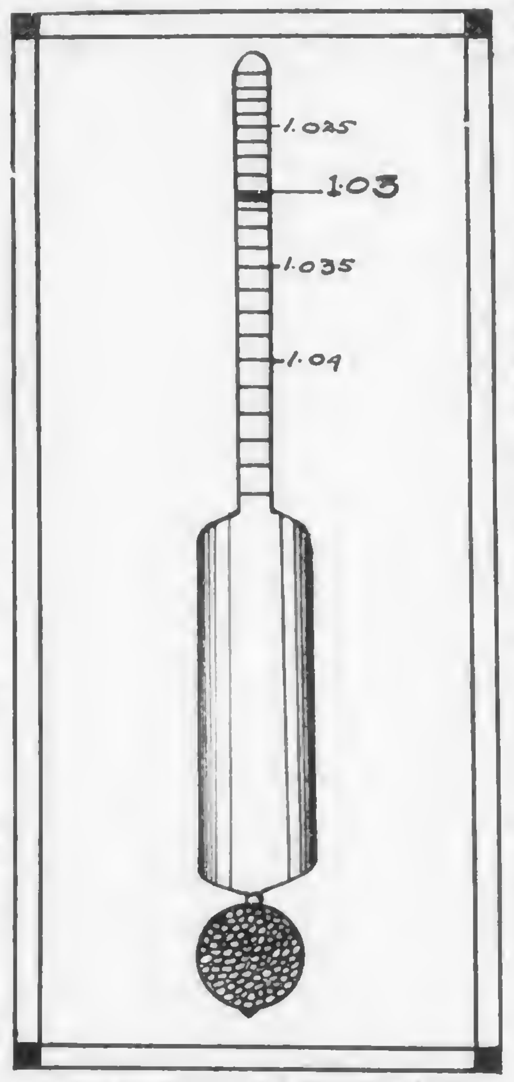
The hen manure is strong in nitrogen and potash but it lacks phosphorus. The acid phosphate supplies the lacking element besides furnishing some acidity, which discourages the spread of the potato scab. The hen manure tends to encourage scab, but the acid phosphate has an opposite effect, so there need be no fear of the manure causing this trouble.—A. J. Legg, W. Va.

Horticulture

SPRAYING THE ORCHARD AND GARDEN

A few years ago the question was, "Does spraying pay?" Now it is. How is spraying done and what materials shall we use?" The fact that spraying is essential to every well-conducted farm is so thoroly established that the only disputable points are those relative to operations and materials rather than to the value of the effort. It has taken a long time to fix the idea of the necessity of spraying in the minds of those who do not make orcharding a commercial business, during which time the great majority of home orchards have been killed by the various insect and fungous attacks and the fruit profits have fallen into the hands of a few men making a specialty of fruit. The general farmer must now replant his home orchard, waiting five or six years for results, or in some cases he must spend time and money in an effort to rejuvenate his old orchard, if it is worth the effort. In any case, he must use modern methods and spray, intelligently, thoroly and carefully.

It must be remembered that spraying should be done with the object of prevention in mind just as much as for curative reasons. Many of our fungous troubles can be prevented by proper spraying, while many are almost impossible to cure after they have become well established on the host plant. It is essential to know three things in order to spray with any degree of success: how to spray, what to spray with and when to spray.



A LIME AND SULFUR HYDROMETER

The question of how is, in a great measure, one of experience. But there are certain principles which are fundamental, and which must be taken as the basis of later success. Spraying should never be done under low pressure. To apply materials at a pressure of 25 or 50 pounds, or to apply them with a whitewash brush is both a waste of materials and the operator's time.

For garden work, where a few rows of potatoes, egg plant, tomatoes, cucumbers, etc., are to be sprayed, the small knapsack sprayer answers every purpose and is cheap. Providing the machine is a good one, high enough pressure can be obtained to make a thoro application, and such an outfit saves the unnecessary labor and expense of hauling a barrel pump over a small area. The knapsack sprayer is also efficient for trees under three years of age, but on older trees it should never be used.

Next to the knapsack comes the hand barrel pump, which is built to suit the needs of the average farmer in his home orchard. With such a machine a pressure of 100 to 125 pounds can be obtained, and its simplicity insures it against accidents and breakdowns. It should be used on potatoes, under field conditions, and in small orchards.

For the commercial fruit grower, the power sprayer is the only economical form, but as most fruit growers are already familiar with the science of spraying, the remarks in this article will be confined chiefly to the general farmer. As was before stated, high pressure is essential, since it breaks the material up into a fine mist, drives this mist into every crack and crevice, and uses much less material then when low power is employed.

Spraying should always be done on a bright, clear day, when the temperature is above freezing and there is a slight breeze. If there is much wind, only one side of the tree can be covered, in which case the operator must wait until the wind changes in order to cover the remaining side.

It must be remembered that every minute part of the tree must be covered if the work is to be thoro. This can best be affected by employing a system in the operation. Start either at the bottom and work up, or at the top and work down. In other words, spray systematically, and not in spots over the surface of the tree.

When the farmer comes to choose his materials, he must know which are at hand and for what purposes they are designed. Insects are divided into two classes, both of which have their respective sprays, neither of which are effective in controlling fungous diseases. In other words, there are insecticides and fungicides, the former being of two kinds.

Insects destroy plants either by biting and chewing the foliage or plant tissue or by sucking the sap and vital juices. The codling moth and plum curculio are examples of the former class, while the San Jose scale and oyster shell bark louse are examples of the latter. The insecticides available for use against the chewing insects are poisonous in their nature, arsenate of lead being the best known and most common, while lime and sulfur, kerosene emulsion, whale oil soap, etc., are effective against the sucking insects.

When arsenate of lead is used it must be diluted in water at the rate of 2 pounds to 50 gallons of water. In order to obtain a good mixture, the arsenate should be stirred well with a small quantity of water until it becomes the consistency of thick milk, at which time it can be added to the full quantity of water.

Lime and sulfur is so superior to the other sucking insecticides that we need not consider the others. It is a disputed point whether it is more economical to buy our mixture or to make it at home. If the farmer has only a small garden and half a dozen trees, it would certainly not pay him to make it. But such farmers are in the minority, there being an average of about 50 trees in the home orchards of this state. In view of the fact that home-made lime and sulfur can be stored, under proper conditions, for an indefinite period, and that it is absolutely efficient, the farmer will find it economical to make his own mixture.

It is made as follows: Into a boiler holding not less than 50 gallons (we will figure on a 50 gallon basis for simplicity sake), put 25 pounds of a high-grade stone linme, not less than 95 percent pure. Build a fire under the boiler and add enough water to slack the lime. When the action is vigorous, put in 50 pounds of any good grade of sulfur—either "flour" or "flowers." Add enough water to make a thin paste and stir constantly. This is a very important point, for the presence of sulfur lumps, which will result unless the stirring is active, lessens the value of the final product. When the lime and the sulfur are well mixed, add enough water to make the total quantity 50 gallons. The boiling should continue for about an hour, during which time the stirring is constant. When the boiling should be stopped, the mixture is a deep mahogany color and free from uncombined sulfur as shown by small yellow lumps. If these lumps are present, boiling should be continued.

In order to spray with this mixture for scale, the operation must be done when the trees are dormant, and this mixture diluted to a density of 1.03. This can be determined by a hydrometer, which is a simple instrument obtainable at any spray supply store at a cost of about $1. Fill a barrel three fourths full of water, drop in the hydrometer and add the mixture until the instrument floats at the 1.03 mark. This final product is then ready to be applied to the trees. If the concentrate

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TIGHT BINDING

mixture is to be stored, it should be kept in air-tight barrels or casks.

Bordeaux mixture is the great panacea for all fungous troubles, altho lime and sulfur can also be used, if greatly diluted, as will be explained. The most common formula for the bordeaux mixture is the so-called "5-5-50," or five parts of lime, five of copper sulfate and 50 of water. The copper sulfate should be dissolved in water, and this, together with the slaked lime, poured simultaneously into the barrel with the 50 gallons of water in it.

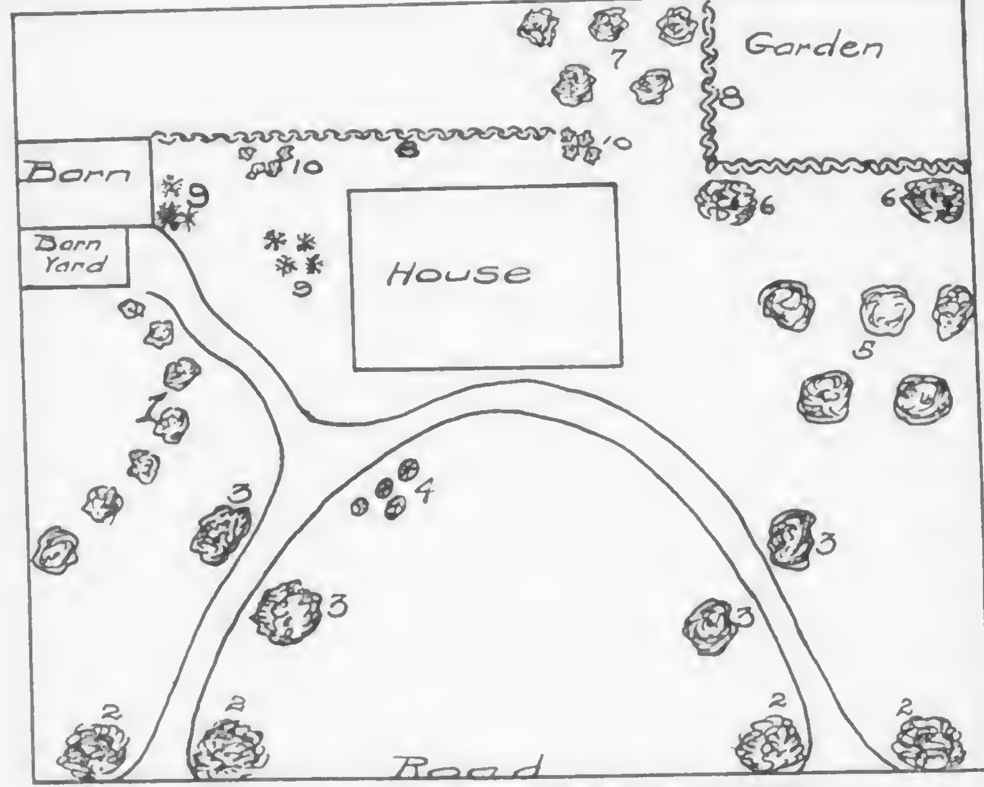
Following is a chart, taken from Bulletin 115 of the Pennsylvania Experiment Station, which gives, in a graphic way, the best materials to use for the more common orchard troubles, the proper strength and the time of application:

Insect or Disease.	Time.	Density.
San Jose Scale—	Trees dormant—Spring or Fall.	1.03.
Scurfy or Oyster Shell Louse—	At hatching time.	1.01.
Blister Mite—	As buds open.	1.025 or 1.03.
Peach Leaf Curl—	Just before buds start.	1.02.
Apple and Pear Scab—	Blossoms just showing pink.	1.007 to 1.01. Use with arsenate of lead.
Apple Worm—	Blossoms two-thirds off.	Same.
	Two weeks later.	Same.
Cherry Leaf Spot—	Three sprayings, a month apart. Begin as soon as infection shows.	1.01 or slightly weaker.

It will be noticed that no mention is made here of bordeaux. Lime and sulfur is substituted, because it is not only efficient, but it also avoids the damage known as "bordeaux injury," which is common where this material is used.

BEAUTIFYING THE HOME GROUNDS

We believe that the house is more important than the barns, and that any effort made to make the home more attractive and a better place in which to live is well worth the time, money and effort. We will publish a series of plans for home beautifying. These will be made simple and practical. The shrubs and trees are all hardy in this locality, cheap and require little care. A farm thus improved will be worth more money, and what is more such improvement will make it a home in the true sense of the word.—Editors.



A CHEAP AND EFFECTIVE HOME PLANTING.

In the plan here shown the dwelling is situated 100 feet from the highway. The garden is at one side toward the rear and the barn and farm yard 62½ feet from the dwelling, almost abreast with it. A row of lombardy poplar, compact from base to summit, and planted close enough to afford a screen for the barnyard, follow a gradual curve on the road and drive sides. Seven spruce trees, planted further apart, occupy the lawn between the dwelling and drive to the barn. A privet hedge separates the kitchen dooryard from the outlying fields. The garden is seen from the house between a group of cherry trees on the left and a mass of lilac on the right. These lilac bushes are planted on the road side of the garden to form two great masses 20 feet broad. The economic feature of these lilacs is that the blossoms are marketable. After blooming each year, suckers and superfluous wood should be cut out. This group is interesting if both white and purple lilacs are used.

The garden is surrounded by a privet hedge. On the right and left of the kitchen dooryard are two plantings of Deutzra Lemoineie, which requires little care aside from cutting out old wood after blooming.

On the ground between the garden and highway, are five apple trees which form an interesting group. (Note the irregular method of planting).

The lawn before the dwelling is an open expanse of close-cut sod. The only plantings are about the drive, as follows: Near each entrance, Rhododendron Maximus, in a broad mass on either side of the gate; next, along the drive, on each side, are Norway maples. About 25 feet from the house, on either side, is a group of four cedars. This planting requires little care and is uniform and satisfying.

Following is an itemized account of materials:

Plan One

1—Lombardy Poplars (Populus dilatata)	$1.40
2—Rhododendron Maximus	3.00
3—Norway Maples (Acer platanoides)	1.70
4—Red Cedar (Juniperus virginiana)	1.20
5—Apple Trees	.80
6—White Lilac	.64
7—Peach Trees	.50
8—California Privet (Ligustrum ovafoleum)	6.00
9—Norway Spruce (Picea excelsa)	3.60
10—Deutzia (Deutzia gracilis)	1.44
	$20.28

—M. R. Conover, Monmouth Co., N. J.

Horticultural Queries.

(Conducted by Prof. H. A. Surface, State Economic Zoologist. Address all queries to Pennsylvania Farmer, Philadelphia, Pa.)

I enclose with this letter a small miller, which has done a great deal of damage in our greenhouses. They seem to deposit eggs under the leaves of the plants, hatch out small green worms, and before you are aware of their presence, eat the whole under tissue of the leaves, and finally the whole leaf is gone, and I believe by that time the worm has turned into another miller and is doing the same destruction. I fumigate with tobacco dust, hydrocyanic acid gas, and sprayed with arsenate of lead, but it seems nothing will kill them. They go so fast after being disturbed that it is hard to catch them.

If there is a remedy to kill them, I would certainly be delighted, for they are the worst pest I ever came across. A remedy suggested from you would be greatly appreciated.—J. H. M., Altoona, Pa.

The insect of which you write so interestingly is known as the Greenhouse Leaf-tyer. You described its habits very well. I do not think they are to be readily killed by fumigation, as they are practically as hardy as the plants on which they feed, when it comes to this method of attacking them. However, I am quite sure that one ounce of arsenate of lead in each gallon of water should kill them and not injure the plants. I recommend you to try spraying again accordingly, with this preparation.

There is a certain stage in their life history, when they first commence to feed, at which they are easily killed. After they have rolled or tied the leaves together it is difficult to get arsenate where they will feed on it and be destroyed by it. Also, as they are pests of the greenhouse only, I believe it would be possible to suppress them by looking carefully over the plants, and picking them off by hand. I, therefore, recommend that this be done. After you once have them cleaned out, you need not fear the ready introduction of them again.

Enclosed find some pieces of bark taken from a sour cherry tree on my premises. Will you kindly state whether of not they are infested with the San Jose scale. I had been informed that this scale does not infect the sour cherry, but the tree is nearly dead with some cause, and observing that it is covered with these eggs, or scales, I am desirous of learning what they are. If it is the San Jose scale, I am familiar with its treatment; if not, I am in need of information.—G. D. L., Greensburg, Pa.

We have received and examined the bark from your sour cherry tree, and find that it is infested with mites, commonly called Red spiders, or Red mites. These are often very destructive to the sour cherry, and, in fact, to other varieties of trees. We see no evidence of scale insects upon these twigs. As a rule, the sour cherry is almost free from injury by San Jose scale, altho I have seen a few places where the scale did attack the sour cherry.

The mites are liable to be quite injurious, and should be sprayed with lime-sulfur at any time while the tree is dormant. Give a thoro spraying with the strong lime-sulfur solution, just as you would for the San Jose scale, and you may be sure you will destroy the mites and their eggs.

Lime and Sulfur for Poultry Houses

I was thinking of spraying my chicken house with boiled sulfur and lime. Do you think it would do as a disinfectant, or can you tell me of some other cheap disinfectant?—J. F. W., York, Pa.

Lime and sulfur is the best and cheapest combined disinfectant and insecticide that you can get. There is no difficulty about boiling it so as to get a good, reliable and effective combination. Merely boil in any kind of a vessel, excepting copper, two pounds of sulfur and one pound of fresh lime with each gallon of water. Continue the boiling for 45 minutes. Let the liquid settle, and dip out and save the clear red liquid, and scatter the sediment on the ground of your garden or orchard; or, better, use it to wash the trunks of your trees to protect them from mice, rabbits and borers.

When you are ready to use this concentrated red liquid, add one part of it to about 10 parts of water, and go ahead and spray the interior of your chicken house thoroly. It will not only clean up the disease germs, but will kill the red mites or lice and other insects that may be there. When the strong solution is diluted with about seven parts of water, it is the best material you can use as a spray on your trees while dormant, for San Jose scale and many other insects and diseases.

PLANTING TREES WITH DYNAMITE

Contrary to the quite general belief than planting trees with dynamite is a 20th century revelation, we find, in reality, that dynamite and powder were used for this purpose a quarter century ago. As early as 1890, Mr. W. R. Gunnis used powder in setting out about 20 acres of lemons near La Mesa, Cal. In appears that Mr. Gunnis discovered the necessity of thoroly breaking up the hardpan or impervious subsoil as a necessary preliminary to successful tree planting. After struggling with the pick and shovel, he hit upon the idea of using explosives to accomplish the same results, with a material saving of both time and money, either of which was important enough to justify the trial. As a result, it was observed that the orchard matured more rapidly, and resisted drouth and other unfavorable conditions quite successfully. For many years his orchard was recognized as one of the most productive and best paying in the neighborhood.

Mr. F. E. Dawley, near Rochester, N. Y., used dynamite for this same purpose as far back as 1896, also with success. It is a fact, however, that this discovery was not handled commercially until the last few years, since which time it has been taken up quite extensively by many nurserymen and planters in all sections of the country.

It is interesting also to note that Prof. E. W. Hilgard, of the Department of Agriculture of the University of California, in his work on "Soils," written during the year 1905, called especial attention to the advisability of using dynamite for tree planting work.

To be successful or profitable, the value of an orchard or farm must be measured by its net return in money, after deducting the total expenditures from the gross receipts, including a debit covering the depreciation of equipment, and a credit covering any increased fertility caused by improved methods. Just as in manufacturing establishments, so it is with the orchard. There are certain expenses, such as rent or taxes, investments in land, machinery or tools, supervision, etc., which remain practically the same whether the business is large or small, so that it takes the gross profit of a certain volume of business to pay these fixed expenses, and there is nothing earned for dividends or net profit until this volume has been exceeded.

This brings us to an interesting feature so often not reckoned with by the planters in its true light, namely, what is the difference between the actual cost of planting trees and the first or initial cost of planting trees? This has been answered by those who have successfully used dynamite for this work; that it is more economical to expend extra money, if this should be necessary, in order to prepare a perfect root bed for the young tree.

For instance, in the case of a heavy first year's loss, the first cost of 4, 6, 8 or 10 cents per tree must be increased by the additional cost of removing the dead trees, the price of new stock, the cost of the second planting, and the rent or taxes on the land, which has produced absolutely nothing while the trees were dying. All this, to say nothing of the irregular and uneven orchard, with the value of the first crop held back just one year, thereby increasing the interest cost on the investment.

In order to verify the above claims the writer has placed himself in touch with those who are in a position to speak from their personal experiences, and indications are that almost universal satisfaction has been obtained. The Rosemar Orchard Company, of Parkersburg, W. Va., advises that losses in dynamited holes were very light as compared with spade-set trees. Mr. Alex. L. Shaw, of Warren County, Pa., had a loss of 16 2/3 percent of the trees planted in spade-dug holes during the spring of 1911. His loss of trees planted at the same time in dynamited holes was but 1 percent.

Some complaint has been heard about dynamited trees sinking anywhere from several inches to a foot or more after the first heavy rain following planting. This is explained by the fact that each charge of dynamite makes a sort of pocket at the point where the explosion occurred. In other words, if the hole is four feet deep, the pocket will be four feet deep. So before attempting to set trees in blasted holes, take a spade push it to the bottom of the hole, give it a half turn and pull it up. This will result in all that subsoil settling back into place, leaving a solid bed on which to set the trees. If this is done, it is impossible for a tree to settle. It is also advisable to set the tree as nearly as possible at the same depth at which it stood in the nursery row.—L. V. McGarvey.

New York Vegetable Growers' Meeting.—The second annual meeting of the New York State Vegetable Growers' Association was held at the Cornell College of Agriculture, February 11 to 13. The attendance was good and interest in the work of the association is growing. An important service has been started in distribution to members of seeds of improved sorts. Good results and further progress are looked for in this service. An attempt will be made to combine local gardeners' organizations under the state association, to form a central clearing house for progressive ideas, both in organization and production work. The following officers were elected for the ensuing year: Pres., C. R. White, Ionia; sec., Paul Work, Ithaca, N. Y.

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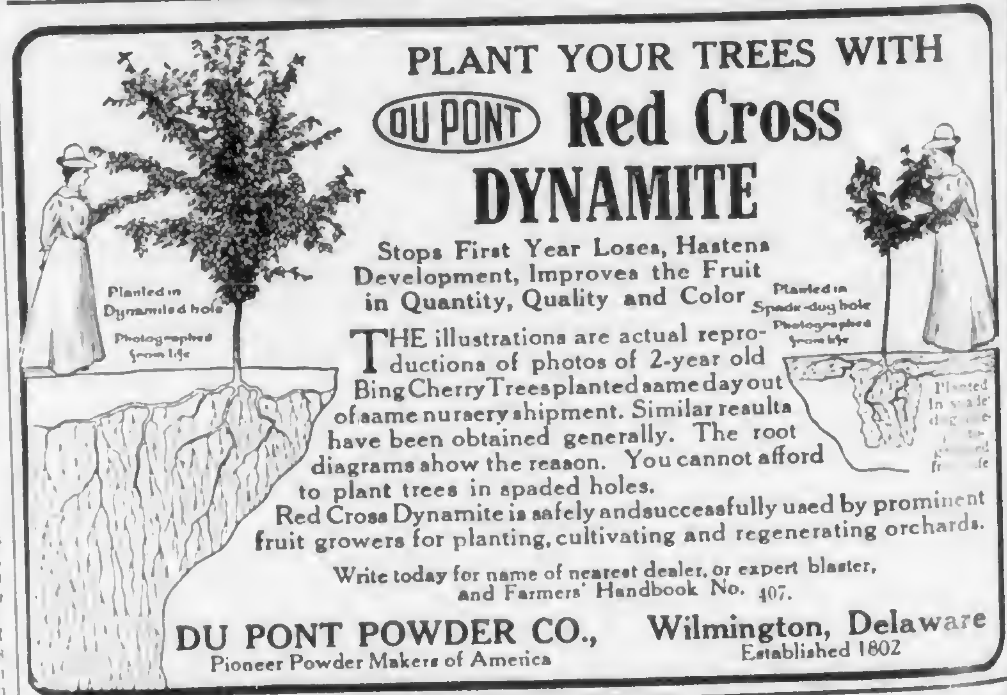

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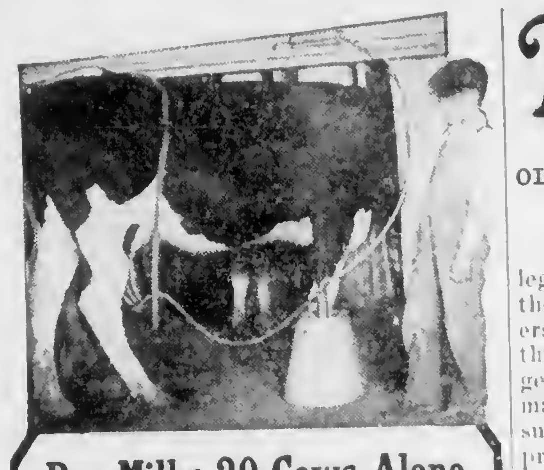

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The Dairy

OLEO MAKERS AT THEIR OLD TRICKS

With each recurring session of the legislature and each new Congress of the United States the makers and sellers of butter substitutes present bills, the object of which, invariably, is to get a market condition in which oleomargarine shall be privileged to be consumed as butter, and therefore sell at practically butter prices. There is no economic reason why the producer of oleo should want it to sell as butter. I say "economic" in its broad general sense. I can see how a greedy financier, who could not see anything but the dollar, would uphold such a practice, but it is a terrible slur upon the great packing industry of this country to find them, year after year, treating their business as tho it had no future.

Now, there is a very well defined and clearly economic principle underlying the whole meat, butter and milk business of this country. Year by year the range cattle are becoming less and less, and cows are becoming fewer and fewer that are kept for the calf they raise each year. It is said that the beef trust has large herds of beef cattle in South America, but I do not know as our people are interested in seeing our herds of cattle depleted thru bad legislation simply because some foreign country still has some waste land and some surplus cattle. Therefore, the question of our meat supply will depend more and more each year upon the well cared for cow, both as to her dairy products and the development of the calf as well. In fact, there are comparatively few cows kept now for the calf they produce.

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The maintenance or destruction of the herds of this country will therefore depend upon which of the three functions of the cow by which she renders service to mankind is encouraged. She produces milk, butter and cheese. She produces annually a calf which either helps to enlarge the herd or gives its carcass to the meat markets. She has a carcass that will enter the meat market sooner or later. It is evident, therefore, that the greatest conservation of the herds of the country would lie in maintaining a condition in which all of these functions would be encouraged.

Now, where does oleo come in in its economic relation to this subject? It is a product of a by-product, and a secondary one at that. The cow's most valuable function is her milk. The second is her milk, because if she lives thru a number of years, her calves are more valuable than her own carcass. The third is her own carcass; fourth, in subdividing her carcass comes the meat; fifth, the hide, and sixth, the fats. So that oleo comes out of this sixth division, or the least valuable of any of the functions of the cow, in connection with the by-product of the hog, and it seems very probable from the reducing vats of other carcasses. Now, if the people of this country are foolish enough to allow a legislative condition to arise in which a product of a by-product of a dead animal shall be allowed to usurp the market of the highest and most valuable function of the same animal living, but one result can come, and that is that more of the animals will be slaughtered.

And the fact is that is just how foolish our people have been. They have been allowing oleo to sell as and for butter in many places, and it is no wonder that the herds of the country are not keeping pace with the increase in population. Now does it not seem foolish, in the light of these facts, that the great meat industry of this country would be so insanely greedy as to continually put forth great efforts and spend large amounts of money to bring about a situation that will eventually, if allowed to continue, cut them off from the raw materials which will keep their factories running?

Our railroads are teaching better agriculture because they know it will, in the future, mean more business for them; but our meat men have gotten along in their study of industrial economy just as far as the fool of history, who "killed the goose that laid the golden egg." Oleo has a normal place in the market. It is a cheap substitute for butter. Being made from cheap by-products, it costs little, and with a normal profit it ought still to sell very cheaply.

Butter is not a cheap product. There is a lot of actual cost in its production, and it must bring a high price or it will not be produced. There is no use in talking of butter at 20 to 25 cents a pound. It costs more than that to make it, as a rule, and as no one is compelled to continue making it whenever the average price falls below the cost, the production will cease and, so it is a practical necessity that there be a cheap substitute. Oleo is that cheap substitute, but it continues to be cheap only as long as it remains in its natural color, white. Whenever it is colored, it is palmed off as butter, and at about butter prices.

The producer of oleo, as well as the maker of butter, the consumer of oleo as well as the consumer of butter, are all essentially interested in maintaining the proper industrial balance between these two products, and nothing should be allowed to go thru our legislature which would in the least break the force of our present law, which, where properly enforced, does prevent the substitute from posing as the real thing.—John A. McSparran, Lancaster Co., Pa.

CROP GROWING ON THE DAIRY FARM

The first step toward profitable dairy farming is to make the farm support the cows. The possibilities along these lines depend upon the amount of thought and study that is put into the work. So long as we are content to conduct our crop growing on the low level of one ton of hay, 30 bushels of oats and six tons of silage corn to the acre, we are farming far below our intellectual capacity. Thought and study are needed to evolve systems of crop production that are adapted to the soil and climatic conditions of eastern dairy farms.

No man can suggest systems of crop production that are suited to all farms in this part of the country. Each farm presents new problems. Each of these problems must be worked out by putting the question to the soil and crops. How many acres of each crop to grow and the order in which they should follow in the rotation are problems which must be worked out by the individual, according to the number of cows he is keeping, the size of his farm, the proportion of tillable land to pasture, the proximity of the farm to suitable transportation lines and markets, and the particular branch of the business he is making his specialty.

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Few dairy farmers, who have never given the subject special study, realize the close relationship existing between the growing of suitable food crops for dairy cattle and the conservation of soil fertility. In no other system of farming is it possible to remove so many dollars' worth of products from the farm and still leave it better than we found it. Dairying ranks with the few absolutely permanent systems of agriculture.

In evolving systems of crop rotation which will supply food for the cattle and conserve the fertility of the soil, experience has proved that the crops should be so arranged as to keep the ground occupied by a growing crop as much as is practicable. By keeping the ground covered, soil washing, leaching and, to some extent, the drying out and crusting over of the surface is prevented, thus providing more suitable conditions for the little helpers, the living organisms, to carry on their work of making dormant plant food into a form available for crop production. Soil that is supporting a growing crop is constantly improving, because the dormant constituents are being changed into vegetable matter which is accumulated by the roots and stubble of the plants, which, in giving up their decaying remains, improve both its physical and chemical qualities.

In the language of the farm, it is growing manure. The advantages of changing these unavailable compounds in the soil into active plant food results in marked advantages, more especially on clay soils which contain a great wealth of natural fertility, but which, on account of being in poor physical condition, do not furnish suitable environment for the roots to grow and secure their supply of food. Such soil may be materially improved, especially in its physical condition and in its content of available plant food, by supporting growing crops which leave their roots and stubble to decay. All this can not be accomplished until the moisture and drainage conditions are properly adjusted to meet the requirements of the crops grown. It is best, whenever possible, and it is usually possible, to have one or two of the crops grown in the rotation, a leguminous crop, which will gather more or less nitrogen from the atmosphere, which with the vegetable matter adds to the supply of humus and nitrogen in the soil.

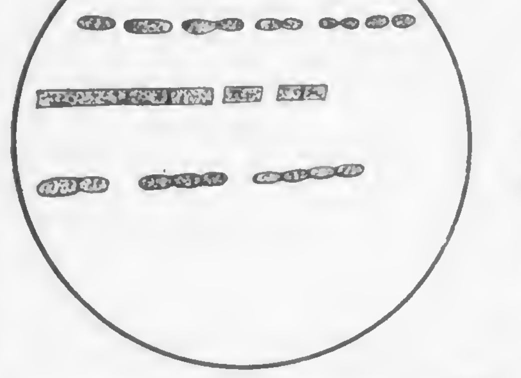
To derive maximum benefits from growing and feeding these soil-improving crops, the whole farm must be organized on a systematic basis. Ample provision must be made for unfavorable seasons, partial crop failures, variations in dates of planting and harvesting, the amount of available labor and horse-power, the quantity of food needed to maintain the cattle and work teams, the proper saving and handling of the resulting manure and various other factors which are constantly presenting themselves to impair the efficiency of the organization.—W. Milton Kelly, Erie Co., N. Y.

KEEPING THE MICROBES DOWN IN MILK

If milk has been drawn under sanitary conditions; that is, in a clean milking room, into a clean pail, by a person with clean hands and in a cleanly manner, then it has a chance to be as free from bacteria as possible, if it is afterwards properly handled. The first point is to remove it to a place where the air is sweet and free from the odors of the stable. Milk is very susceptible to bad odors, and will quickly absorb anything of the kind. In the milk room it should be immediately cooled and aerated. This can best be accomplished by running it over a cooler, thru which ice water is circulating. This will remove most of the animal odor and the odors of the stable, and also reduce the temperature to a point at which the bacteria will multiply but slowly. But be as careful as you may, some bacteria will get into the milk. But it is not necessary to begin with as many millions per cubic inch as are often found in newly-drawn milk.

Without taking pencil and paper and working out the problem, it is hardly possible to realize how rapidly many kinds of bacteria multiply. Many bacteria reproduce themselves by dividing in two, thus forming two new plants instead of one. Dr. Miller, of the State Department of Health, who is lecturing thruout the state on tuberculosis, says that the bacterium which causes consumption, known as the "White Plague," divides under the most favorable conditions every half hour. This tubercle is only one thirty-thousandth of an inch long, yet in a good, rich medium, like milk at about the temperature at which it is drawn from the cow, this multiplies so fast that if there was enough food and no misfortune happened to any of the little plants, in 24 hours they would make a row, if placed end to end, that would extend 72,621 miles, or almost three times around the world at the equator. A single plant would, if the conditions were all entirely favorable, produce, in 24 hours, 137 trillion plants. Fortunately for us, these perfect conditions never exist, or there would be small show for the human family. But if, on a hot summer day, the milk room gets warm and there is no ice, the conditions may become very favorable.

To avoid this rapid multiplication of bacteria, the milk, as soon as drawn, should be cooled, for just as the trees and grains do not grow during cold weather, so these micro-organisms stop growing when the temperature is sufficiently reduced. The cooling should be carried to as low a point as possible, but of course, not to actual freezing, unless you are prepared to deliver the milk in frozen blocks, as they do in some parts of the world. This would certainly be a good way to check the growth of bacteria.



COMMON TYPES OF BACTERIA FOUND IN MILK.

Upper Row Shows Type Which Causes Milk to Sour. Middle Row Causes Swelled Cheese; Lower Row Makes Good Tasting Butter.

From what has been said, it is evident that all milk drawn under ordinary conditions is well seeded with the small plants which are on the sides and udder of the cow, on all parts of the stable, on the milker and floating in the air. They can be very much reduced by pasteurization. This process consists in passing the milk thru a machine heated to a high temperature, thus killing many of the germs. But there is danger of spoiling the flavor of the milk, and the germs which are most resistant to the heat are not those which cause the milk to sour, but those which cause it to become putrid. So it often happens that pasteurized milk will not sour properly when the temperature is raised to the proper degree, but will become putrid or bitter.

Of course, where the milk is full of bacteria, pasteurizing is the only way to destroy them. But a far better method is to draw the milk under such circumstances that the micro-organisms will not get into the milk and, by lowering the temperature as soon as possible, prevent those which do get in from multiplying. If milk were perfectly sterile, it would keep indefinitely, but under present conditions it seems as tho that condition was impossible to attain. So the next best thing is to so control the numbers that they will do the least possible harm.—Wm. G. Owens, Union Co., Pa.

THE COW QUESTION

Asset or Liability?

In the study of cow utility there are evidently too many dairymen who quibble and muse over breed differences, and the more they fuss over racial qualities, the more the vision becomes mistified in discerning individual points. There are only two classes of cows in this broad world after all, the cow that earns her owner more than she costs him, and the other whose annual record shows a deficit.

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profit kind, the latter is a debt producer. The earning cow, to the casual observer, may be simply a typical animal of a breed, but to the studious owner she is more; she is his ideal, not only in breed but as to family lineage. She has that conformation and functional power that is reflected at the pail and test. Her brown hair, as a Swiss, gray as a Jersey, or black and white as a Holstein will not avail. The pail never tallies on hair color merit any more than human hair reveals saintly or reverse character.

The dairyman must know that the science of animal breeding has not yet eliminated the plainly visible, much less the constitutional and functional defects of our domestic animals. Therefore, his hope and safeguard lies in a timely and careful study of the animals to be bought or bred, a study of the breed and family lines, and the inate tendencies tracing for individual merit or defect with our ideal as the measure unit of merit. We should keep in mind that a pedigree is largely a chain of lineage, not always a record of merit. It is a rainbow of promise to the faithful; some of these would even hide in shame if they could but see the defects of the sires and dams whose greatness they have proclaimed.

In selecting breeding stock, more attention should be paid to high annual production under normal conditions, in which not weekly tests are the measure of production, but the annual test and the measure of constitution and functional thrift at the end of the year, at which time the cow should still be capable of reproduction, duplicating her good qualities in the progeny.—D. H. Watts, Clearfield Co., Pa.

DAIRY CONFERENCE ON TUBERCULOSIS

The recent dairy conference held in New York declared that it is inexpedient to demand the slaughter of all animals reacting to the tuberculin test, but that the products of such animals should be rendered safe for consumption by men or animals. The opinion was general however, that such animals as are shown by a physical examination to have generalized tuberculosis should be slaughtered, and if in the possession of the original owner at the time, with compensation to the amount of their actual value.

The testing of all dairy cattle by tuberculin was not insisted upon by the conference, altho such a step, it was declared, is very desirable as a measure in the interests of the public health. By request of the chairman, Dr. Park, of New York, opened the discussion. He declared that the disease is usually present only in lesions made by the tubercle bacillus. These bacilli are freely given off by the tuberculous cow, either thru the feces, or, in case the udder is affected, in her milk. In either case, if they find lodgment in other animals or in children, they are very likely to create the disease. If tuberculous cows are removed from the herd, and the premises properly disinfected, the remainder of the animals will not contract the disease. Speaking of its effect upon children, the doctor remarked that of children fed upon raw milk, one-half were shown to have contracted tuberculosis in some form. The only way to eradicate the disease, he concluded, is to keep healthy cattle from contact with those which are diseased.

Discussion of the policy of state payment for cattle slaughtered as the result of a failure to pass the tuberculosis test took the form of an experience meeting, in which each delegate recited the attitude which prevailed in the state which he represented. There was a pretty general agreement in the thought that simple justice to the farmer demands that he be reimbursed for cattle slaughtered by the state, it being the consensus of opinion that all such cattle have a certain value.

The tremendous amount of money involved in such payments, in case the testing is made general, gave the discussion a very conservative turn thruout, however, altho it was pretty generally argued that only by remunerating the farmers could they be induced to have their herds cleansed from tuberculosis. Dr. Rumsey, of the Bureau of Animal Industry, at Washington, recited the manner in which tuberculosis had been practically banished from the District of Columbia by this method. He also detailed several instances in which herds had been thus purified in Virginia. Nevertheless, the delegates were not willing to indorse the rather drastic proposals before them, and contented themselves with this action:

"It is the sense of this convention that it is unnecessary and inadvisable to demand the destruction of cattle reacting to the tuberculin test, unless they show physical signs of generalized tuberculosis.

"In the case of such cattle as react to tuberculin, but do not show physical signs of generalized tuberculosis, measures should be taken to make the products of such cattle safe for food for men and animals.

"Such cattle as show physical signs of generalized tuberculosis, whether or not they react to the tuberculin test, should be slaughtered with compensation, but only to the original owners."

Even more conservative action was taken concerning the suggested intrastate quarantine, which would forbid the sale of cattle or their removal from one section of a state to another, unless they had successfully passed the tuberculin test. There was no doubt expressed that such a law would be very effectual in extirpating the disease, but the hardships it would probably work upon the farmer led the conference to go no farther than the declaration that "it should be illegal for a farmer to move cattle or sell them after he has been notified by the state or federal authorities that his animals are diseased, except on permit."

The sentiment against making the tuberculin test compulsory was practically unanimous, altho the meeting went so far as to declare that "it is desirable, as a public health measure, that all dairy cattle should be tested with tuberculin as a diagnostic agent." It was also agreed that the results of all tuberculin tests should be reported to the state authorities and kept on file, but not for public inspection. The convention laid special stress upon the matter of disinfecting stables and other dairy premises after tuberculous cattle had been removed therefrom. It insisted upon disinfection once a year, and always under state supervision or authority.—D. T. Hendrickson, Monmouth Co., N. J.

NEW YORK MILK CONDITIONS

At the recent meeting of the Cornell Dairy Students' Association dairy conditions in New York state were discussed. Formerly more milk was used for making butter and cheese in this state than for shipping, but conditions have changed and are changing. The state is fast becoming a milk shipping state. Transportation is good, and in many cases there is more money in shipping milk than in making the products. In shipping there has not been any attention given to the fat content or solids in milk, and the consequence is that many herds contain cows producing a very low quality of milk. Some cows give milk as low as 2.2 percent, and some herds are below the legal standard of 3 percent fat, or 11.5 percent solids. Of late there is a demand for a better content, but it is not certain that the fat test will become general in the shipping territory. There are some sections where it is done.

Inspection has become quite general in the state, and there has been a large amount of complaint regarding it, mainly because the early inspection from New York City was made by those who knew little about the dairy business. The conditions are changing for the better, but the situation has not been fully reformed. It seems that the State Department of Agriculture might well do the inspection in the country and the city do its work within the city itself. Coupled with inspection there should be instruction. The state department is doing more instruction than formerly, and will probably do more still.

One-third of the cows in the state are not paying for their feed. Cow-testing associations should be formed and poor cows discarded. There would be more money made by so doing. Cleaner milk is needed, and more care should be exercised in its handling. The use of a damp cloth on the udder and flanks of the cows, omission of feeding previous to milking, and the use of a small-topped milk pail will do much to improve the conditions. All skim-milk sent back to the farm ought to be pasteurized, and such a law is likely to be passed in the near future for the prevention of the spread of tuberculosis. Live steam may be passed into skim-milk for pasteurization. Exhaust steam from the separator may be used for the purpose.

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Poultry

KEEPING DOWN THE CHICK LOSS

Bringing young chicks thru the danger period—that is, from the shell to the ninth week—is the most exacting part of the entire poultry raising business. Probably the greatest stumbling block in the successful working of every large-scale poultry raising enterprise, and certainly the one that has been the cause of more abandoned poultry plants the country over than all other troubles combined, is the loss of young chicks. Poultry raising is a business where no small detail may be overlooked with impunity, and altho there are no infallible success-insuring rules, there are some well-established fundamentals that should be known and observed, and also some general practices that if followed will materially keep down the loss of chicks in their infant period.

The baby chicks should not be fed for from 24 to 48 hours after leaving the shell. Many make a mistake right here by feeding within the first 12 hours. The chicks do not need any food so soon, for they have just absorbed the last of the egg yolk, and thus if offered some food they will eat it, the food not only is wasted but does actual injury. When the hatch comes off allowing that natural incubation is followed, as is the case on most farms, confine the hen in a coop for a week or 10 days, allowing the chicks to run in and out thru the slats of the coop; thus the hen can not overtire the chicks or lose many from leading thru wet grass.

There are many ways of feeding chicks successfully. Any good, clean, small feed, not too moist and not containing too much fat, may be used. But beware of giving too much; overfeeding is a serious fault when chicks are confined. Above all, one should be sure to give plenty of pure, fresh drinking water, in fountains of such construction that the chicks can not get themselves into them and become draggled, or even drowned. First and last, the writer has tried many different feeding plans, and observed the trial of many more, with more or less success. But I have come to the conclusion that locality of the poultry plant makes some difference in the value of any of these plans, and that a feed that has been most successful in east-central New York State did not work nearly as well in southern Maryland, and apparently the difference is even greater further South. The relative elevation and atmospheric conditions also seem to make some difference in what constitutes a most desirable feed.

With the writer, incubating eggs or raising chicks with hens is not practical. Furthermore, I believe it would pay any farmer raising a hundred or more birds yearly to adopt artificial incubation, allowing that he will give the incubator the careful attention that any such machine demands, and not forget it half the days or "let the children run it." The writer has never had any good results with cheaply-constructed incubators. Fully a dozen different makes have been tried and discarded. The fact is that the essentials of a good incubator cost money to install, and one had better pay for them directly in a good machine, than to indirectly pay for not having them thru poor hatches.

Incubator chicks must be brooder raised, if one is hatching any number, and this is where the second stage of trouble for the inexperienced (and often the experienced, too) begins. With any form of brooder the chicks require care at first, until they are "hover broken," to see that they do not crowd together. Healthy chicks are less given to this, unless they are too cold, but it is a bad tendency, and if allowed to prevail will weaken the chicks greatly. Too great emphasis can not be laid on the importance of cleanliness in the brooder, chicks may thrive for a time, but a high death-rate, with the survivors weakly and stunted, will invariably result from such conditions. It pays to "clean house" at least three times a week and to spray the brooder with some good disinfectant weekly—or every 10 days at longest. If vermin once get started it is a harder job to get rid of it than to keep it from getting started by disinfecting often.

After the eighth week from the shell, if they are a normal lot, the chicks may be considered out of danger—except for an epidemic of some contagious disease—and will not require so much care and attention. If on free range, wholesome food, pure water and a safe place from night prowlers will be about the only requirements to be supplied. Where confined, a further attention is necessary in seeing that they have plenty of shade as well as plenty of sunshine.—Clark Westford, Schenectady, Co., N. Y.

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AGRICULTURE THE KEYSTONE OF NATIONAL PROSPERITY
ESTABLISHED 1880 PUBLISHED WEEKLY

Established 1880. Published Every Saturday.
Entered as second-class matter at the postoffice at Philadelphia, Penna.

The Lawrence Publishing Co., Proprietors
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General Office
214-216-218 South 12th St., Philadelphia, Pa.

Branch Offices For Advertising Only
Cleveland, O., 1011-1015 Oregon Ave.
New York City, 41 Park Row
Chicago, Ill., 600 First Nat'l Bank Building
Detroit, Mich., 39-45 Congress St., W.

TERMS OF SUBSCRIPTION

One Year	52	copies	to	one	person	$0.50
Two Years	104	"	"	"	"	$1.00
Three Years	156	"	"	"	"	$1.25
Five Years	260	"	"	"	"	$2.00

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RATES OF ADVERTISING
15 cents per agate-line measurement, or $2.10 per inch (14 lines per inch) each insertion.
No advertisement inserted for less than 45 cents per insertion.
No deceptive, immoral or swindling advertisements inserted at any price.

Philadelphia, Pa., March 1, 1913.

RURAL ENGINEERING

The tremendous growth in popularity of agricultural educational work in recent years has reversed the relative positions of agriculture and engineering in the land-grant colleges of the country. The provisions of the land grant and the act creating these colleges called for the maintenance of schools giving instruction in agriculture and mechanic arts. For years after the passage of this act and the establishment of such colleges, the mechanical branches received the greater amount of attention and drew the bulk of the students. Up until about 10 years ago there was scarcely a land-grant college in the country in which the agricultural students compared in numbers with the mechanical students, and in many of these institutions the mechanical schools were practically the only interest, with the agricultural school little better than a name. But at about that time there was an awakening in agricultural interests, and the stronger colleges began to assert themselves as leaders in the new and highly practical line of teaching farming. At the present time most of these land-grant institutions find the situation of 10 years ago completely reversed, and the agricultural schools far in the lead, both in attendance and in popular favor. So pronounced has this condition become that in some states the authorities are pressed to keep the mechanical branches alive. The direct cause of this condition is no doubt the increased interest in all that pertains to farming, and the realization of the value of these agricultural schools. It is questionable, however, if the mechanical schools have not themselves to blame in a measure, at least, because of their failure to shape their courses to meet the needs of their states. They have been content to continue on the orthodox lines of mechanical instruction, and have overlooked the great field of mechanical application in the growing agricultural interests. Only recently has there been a move to correct this error. At a recent meeting at Washington, the engineering divisions of these colleges perfected an organization for the purpose of co-operating with a similar organization of the agricultural divisions, and devising ways and means of making the engineering schools of maximum service to the farming interests of the states. It is contemplated that this development work take up the application of power to the farm, handling of machinery, methods of drainage, operation of motors and tractors, etc. These constitute a field of tremendous possibilities, and no state institution is in better position to develop them than these engineering schools. Soil drainage is fundamental to maximum farm development, and it has many problems yet unsolved. The necessity of utilizing heavy-power machinery to replace high-priced labor is opening up new fields for the engineer, and the complexity of farm operations is developing the need for new and improved types of machinery. Then the development of natural water resources, and converting power now going to waste into practical and useful farm help has scarcely been touched. There is valuable energy now going to waste in streams and rivers that will some day be developed and utilized in providing power for farm work, irrigation and lighting, etc. There is almost an unlimited field for the engineer in these problems, and our mechanical schools are doing well to turn their attention to them.

MILK REGULATION

No branch of farm work has suffered more in the last few years thru ill-advised and experimental legislation, both state and local, than the production of market milk. The rapid advance in the study of bacteriology and germ life in the past 10 years have opened a wide field for speculation as to the dangers of various classes of germs in milk. The main purpose of this agitation is good, and every honest dairyman welcomes reliable information on ways and means of producing clean milk and methods of avoiding impurities and contamination. But much that has passed for study and investigation has been mere speculation, and many of the remedial measures imposed have had no sound foundation for their inception and little or no purpose for their enforcement. The result has been little actual progress in improvement of the quality of the aggregate milk supply, but continual inconvenience and uncertainty for the milk producers. The lack of definite and authoritative conclusions on what is needed in legislative regulation was shown in the recent meeting of the so-called governors' milk convention in New York City. The governors of the states that contribute milk to the New York market each appointed delegates to this meeting. These delegates were supposed to be in close touch with conditions and needs in the milk trade, and qualified to advise on uniform state laws and city regulations to give needed control. Yet there was scarcely a point in the entire subject upon which a majority of the delegates could agree. All were influential in making the regulations in their own states and cities, yet their ideas and conception of the needs of the trade were at such variance that they could not agree to general terms. This uncertainty and lack of definite knowledge is typical of the condition in every large consuming center, and the result has been a hodge-podge of legislation which is unsatisfactory in its corrective purpose and a cause of great inconvenience and often financial loss to the dairymen. Most milk producers are willing to assume the responsibility which rests on every manufacturer of food products, and conduct their business upon lines to insure the greatest degree of purity and wholesomeness, but they are reasonable in asking that the regulations imposed upon them be based upon sound economic principles and scientific truth, and then be made stable and permanent. The governors' convention was a move in the right direction. There should be more such meetings. Let the makers of the laws thresh this subject out until they can agree upon just and efficient laws, and then make them uniform in all the markets.

STATE SCHOOL BOOKS

The Kansas legislature recently passed a law providing for state printing of school books to be used in the public schools. This printing is to be done in the state plant now maintained for other state printing, and the books are to be sold to school children at cost. Of course, there was a howl from the large book companies, and the antiquated arguments against the state entering in competition with private enterprises were brought into play. But the people of some of these western states have a way of securing legislation favorable to their aggregate numbers rather than to a special few, and the state printing law is but an example. There will be objection that such laws are socialistic, and that they interfere with business development. But the socialistic label is losing many of its terrors, and it is dawning upon the public that general state and national development, which means better advantages for the masses, is the best business development. The state compels attendance at schools, which, in turn, imposes obligation to buy books. This obligation falls upon all classes that have children of school age, and to that extent the state imposes a school-book tax upon its people. If the state can publish those books and deliver them to its citizens at a less cost, it is simply reducing one item of taxation. The saving to the citizens is a saving to the state. The only loss incurred in the change falls upon the book companies, which may be located in some other state, and which may not pay a cent of taxes in the states in which they sell their product. The plan is based on common-sense business principles, and must eventually come in other states.

CONSERVATION OF CATTLE

A bill now before the Pennsylvania Legislature provides for a rather stringent plan of building up the cattle industry of the state. Basing the present high prices of beef and dairy products on the scarcity of cattle, this bill would prohibit the slaughter of heifer calves and female cattle under three years of age, which are sound physically and constitutionally and capable of reproduction, for a period of two years. Provision is made for state inspection of the cattle to determine their physical and breeding qualifications, and a fine of $25 is provided for violation of the law. No distinction is made between breeds or classes, and the law would apply to beef and dairy cattle, scrubs, grades and purebreds alike. While the general practice of slaughtering a great majority of calves to supply the demand for veal is no doubt responsible, in a large measure, for the present scarcity of beef cattle. it is doubtful if this plan of preventing the practice would bring desirable results. If it is true that the average butter production per cow in this state is only about 160 pounds per year, as is generally claimed, it is very evident that a great proportion of our present cow population is kept at an actual loss. As farmers are gradually and constantly changing from beef production to dairying, it is equally evident that the present grade of beef cattle are even less profitable than the present grade of dairy cows. Hence this proposed law would impose upon the farmers of the state the necessity of keeping increased numbers of animals which are now showing no profit. And as the purpose of this increase in cow population is to decrease the profits in cattle products, the loss from maintaining such herds would be increased in proportion to the decrease in price. Cattle production in the East has declined as the result of a natural economic condition which embraces cost of land and labor, demand for other products, etc. Such natural conditions can not be met or reversed by artificial conditions established by state legislation.

MEAT PRICES

Some explanation of present high prices of meats is found in statistics on live stock just made public by the Department of Agriculture. Figures showing number and value of live stock in this country on January 1, show that in the last 12 months there has been a decrease of 202,000 in number of milk cows; 1,230,000 in number of other cattle; 880,000 in number of sheep, and 4,232,000 in number of swine. The three latter classes constitute the meat yielding classes and show a total decrease of 6,342,000 head. With the normal increase in supply, the increased price is inevitable. Beef cattle increased $5.16 per head during the year, as compared with an increase of 48 cents per head for sheep and $1.86 per head for hogs. The total farm value of the classes on January 1, 1913, was $1,755,533,000, as compared with $1,494,562,000 on the same date in 1910, an increase of $260,971,000, or nearly 18 percent. Thus while the numbers were decreasing at the rate of nearly 5 percent during the year, the price increased nearly 18 percent.

HELPING THE FARMER

Some of the many schemes, plans, institutions, etc., which are created ostensibly for the purpose of helping the farmer and uplifting agriculture seem to be more important in the minds of the promoters than the problem of rural improvement itself. There is danger, because of the sudden popularity of this work, of complicating the problems and increasing the number of parasites we already have. Everybody wants to help the farmer, but everybody wants a big slice for his help.

The farmer was getting along pretty well, even before he was "discovered," making a living, paying his own taxes, and others' too, and making a safe and sane progress; and all he asks is a fair chance and an opportunity to work out the problem which he alone can finally solve.

Agriculture is more than a business. It is a life, an inspiration; and only those who are in close touch, body and soul, with the great forces of Nature, can fully understand that life and its needs. The farmer seeks knowledge, advice, and is willing to appropriate that which is helpful and practical. He realizes that education—real education—is the means by which man is moved upward and onward.

Agriculture must not be commercialized; that is, the farm must not be improved at the expense, nor to the neglect, of the farmer. We have now enough agencies to do the work. What is needed is to make these agencies more efficient. The schools, the church, the grange—these institutions, fully equipped and properly developed, are entirely sufficient to solve the so-called problems of agriculture.—R. P. Kester.

THE INSECT TAX

There is now a bill before Congress which is designed to place migratory birds under the protection of the federal government. It is a measure which, in its economic aspects alone, is entitled to the support of everyone, and particularly the farmer, who, in his constant warfare with insect pests, is greatly aided by the birds. The bill has passed the Senate, and is now awaiting action in the House.

It would seem that argument were unnecessary for the protection of our bird life in the face of facts such as these. The loss which farmers sustained the past year from insects will exceed, by hundreds of millions of dollars the total value of the wheat crop. Dr. Lintner, of New Jersey, estimates the annual loss to farmers caused by cut worms alone, at $100,000,000. Professor Surface, of Pennsylvania, is quoted as saying that that state will suffer a loss of more than $1,000,000 to the apple crop of last year, entirely due to the insect known as the codling moth.

As long ago as 1904, Dr. Marlatt, basing estimates on the government crop reports, asserted that the loss to agriculture that year, caused by insects, could be placed at $795,000,000, and this estimate did not include anything in the line of expense for insecticides. Another writer puts it in this forcible language: The value of the 600 college and university buildings in the United States is estimated at $260,000,000 and their endowments at $219,000,000 more. If all of these were wiped out in a night the insect tax paid in a year by the farmer would rebuild them again and leave a balance on hand sufficient to pay 20 percent of the national debt.

Now, where do the birds come in! Birds eat insects. And they eat little else. And they eat them by the thousands. Statistics are not new on this point, but they are quite convincing. Under the supervision of the Department of Agriculture at Washington, or one of its bureaus, it was found on examination of the crops of 3,500 birds, that the crop of a night hawk contained 60 grasshoppers and another 500 mosquitoes; that of a black bird contained 38 cut worms; that of a cedar bird 70 canker worms, and so on. Enough of this to show that birds are voracious consumers of insects.

Among the wise purposes for which the birds were created not the least is the purpose to help regulate the insect life all around us, and thus to aid the farmer almost beyond computation as to value in crops saved from the devastation of the hordes of insects. If we permit the birds to be destroyed, we permit the increase of injurious insects which seek to devour almost every crop that the farmer grows. Let wise protective legislation for the birds be enacted. Let the McLean bill become a law.—New Yorker.

NEW JERSEY ROAD WORK

Out of the 1912 appropriations the state built 44 miles of road and finished 33 miles out of the unexpended portion of the 1911 appropriation. The expenditures for the 1912 roads totalled $321,185.15, and for the 1911 roads, $208,843.90. The state has spent for state aid to county roads since the passage of the first state aid act the sum of $3,651,599.75, to say nothing of repairs, and has built 1,684 miles of roads with that money. As the first experiment in New Jersey in furtherance of the plan of permanently employing convict labor on road work, 16 convicts have been set to work upon the roads. Upon the result of this experiment will probably depend in a large measure, the action of the next legislature in extending the scope of the plan of employing convicts on the roads. Col. Edwin A. Stevens, State Road Commissioner, has made two recommendations for the betterment of our highways. First, to place all roads under a permanent state force holding office under civil service, and, second, to require every county and municipality to place its road force, including the road supervisor and all the subordinates under civil service before any state aid for road be granted. This, he declares, would provide means whereby an effective road force could be enlisted and maintained.—D. T. H.

PENNSYLVANIA LEGISLATIVE NEWS

Highway Legislation.—Several classes of highway legislation are proposed in the rush of bills. Most of them are of recognized value and are being given thoughtful consideration. One provides that the income from automobile licenses shall be paid to the State Highway Department for road maintenance, this money not now being available, altho provided in the license act, owing to a conflicting statute. It will add $1,000,000 for this year's work. Other bills appropriate $4,000,000 for improvement of dirt highways in townships under a new system of state distribution, provide for payment of the bonus on road tax, both in arrears and for coming two years. Another bill provides that the State Highway Commissioner apportion to each county the money available for highway construction in the proportion which the mileage of unimproved state highway bears to total mileage of state highways, the commissioner to expend the money.

Trespass Laws.—Three trespass bills are under discussion. There is a move to modify the existing law which makes a person liable to arrest for merely walking on right of way of a railroad. One bill, which has passed the house, declares it trespass to walk on a private road when it leads to a church, public building, mill or factory.

Aid for County Fairs.—A bill pending in the house provides an appropriation of $50,000 for 1913 and 1914 in aid of county fairs and other agricultural exhibitions.

Duplicate Taxes Bill.—A house bill provides a remedy for the difficulty where farmers have properties in two or more townships or districts. Nearly every year a controversy arises over the assessment of such properties, and it has been an experience that men have been assessed and forced to pay taxes to the full amount in the districts wherein properties lie. Under the terms of the new bill, a person paying the full amount of the taxes in one district may claim to be held free from payment in another. A method of appeal to court to strike off liens is provided. The chief trouble has been that assessors, instead of figuring out the proportion of a farm lying in each district, assess the full amount. A few court reviews under the new act would better conditions materially.

Legislation on Farming on Shares.—A bill has been introduced providing that where land shall be leased on shares it shall be unlawful for any tenant to remove from the land the share of the lessor or landlord, unless specific permission in writing is given by the lessor or landlord. The penalty for violation is made a fine of from $100 to $500, or six months in jail, or both.

Increase of State Police.—Among measures just introduced is one for increase of the state police by 120 men. It is the plan to increase the number of privates in each troop from 45 to 75. There are now four troops. The increase is asked because of the demand for services of men at fairs and various gatherings and celebrations, and to enable a system of rural patrols to be extended.

Appropriations. — The appropriation bills are now under serious consideration, and attention is being given to the agricultural items. The appropriation for vocational and agricultural education is considered as certain to pass. Those in aid of state agricultural work are to be taken up in detail. The State College appropriation in hand asks for $1,800,000 in round numbers, and there is $5,000 additional provided for experiments in tobacco culture at the state experiment station. The state fair bill is also being considered.

Game Bills.—Game bills changing seasons are in such number that members of the game committee are considering referring them to a sub-committee. The seasons are changed according to local conditions in various parts of the state, and the danger is that such frequent changes as are proposed will be confusing to hunters. The hunters license bill, which is being opposed, will likely be reported out with an amendment requiring every hunter to wear a tag bearing his license number, so that in event of trespassing on a farmer's land he may be identified and followed up.

Protection for Skunks.—A bill which is designed to protect the skunk because of its value as a destroyer of vermin or for fur has been presented. It allows the animals to be killed only from October 15 to December 15, and makes a stiff fine for anyone killing out of season, even if it decides to visit a farm house or barn.

Limit on Horse Work.—A bill fathered by the cruelty society interests has made its appearance in the house. It would apply to farmers, as well as to people in cities, in prohibiting the working of horses or mules or other draft animals for more than 12 hours a day. Amendments will probably be made to the act, as in its present form it would not count in the rest period in the middle of the day.—Hamilton, Harrisburg, Pa.

NEW YORK LETTER

Investigation for Fruit Growers.—In his annual address to the New York State Fruit Growers' Association, in session at Poughkeepsie, President L. L. Morell, of Kinderhook, recommended that a petition be sent to Governor Sulzer to appoint a committee to investigate the general situation of fruit packing and selling with reference to the alleged difficulties between the growers and the commission men. About 400 were in attendance at the meeting. On the program were B. J. Case, of Sodus; C. K. Scoon, of Geneva; C. R. White, of Ionia; Prof. E. O. Fippin, of Ithaca; Prof. P. J. Parrot, and U. P. Hedrick, of Geneva, and Dr. E. P. Felt, of Albany. There was a banquet at the Morgan House in the evening. A fruit exhibit was a feature of the meeting.

The Milk Business.—There is a bill before the legislature to establish a sanitary milk department to be administered by a commission, the head of which shall receive a salary of $7,000, the other members to be the Health Commissioner of New York City and the State Commissioner of Agriculture. The bill is intended to prevent deception in the sale of dairy products and to preserve public health. The commission is given wide powers.

New Highway Department.—Governor Sulzer is going to do away with the present highway commission of three and have a single-headed highway department, if a bill now before the legislature becomes a law. The senate has passed the bill by a vote of 37 to 9, and the assembly will vote on it next week and probably pass it. The investigations into the administration of the present highway department have uncovered such irregularities that the governor is bound to have a department with a single head, and then hold that man responsible. It has been shown that about $800,000 were wasted, or worse, by the department last year.

Commission Merchants.—The bill to license commission merchants is having hard wheeling, with the chances against its becoming a law. Since the hearing last week, which was attended by several hundred people, the commission men have been bombarding the legislature with all sorts of literature to strengthen their position, while those in favor of the bill have been doing comparatively little. The commission men are particularly strenuous in their opposition to the clause that would permit shippers to know the names of the commission men's customers.

Farm Legislation.—Surely the farmer is being looked after this winter by our lawmakers. The number of agricultural bills now before the legislature is a large one. Farmers have at least two good friends in the senate and more, but Senators Roosevelt and Godfrey are always to be depended upon.—New Yorker.

INSTITUTES FOR THE WEEK

March 3-4, at Oxford, Chester Co., R. P. Kester, S. W. Funk and C. C. Hulsart. At Mahaffey, Clearfield Co., J. T. Campbell, F. W. Card and M. H. McCallum. At Washington, Armstrong Co., F. Menges, Dr. M. E. Conard and F. H. Fassett. At Clarington, Forest Co., L. W. Lighty, R. A. Runk and E. L. Phillips. At Trappe, Montgomery Co., D. H. Watts, W. T. Wittman and Mrs. E. E. Smith.

March 5-6, at Unionville, Chester Co., R. P. Kester, S. W. Funk and C. C. Hulsart. At Grampian, Clearfield Co., J. T. Campbell, F. W. Card and M. H. McCallum. At Kittanning, Armstrong Co., F. Menges, Dr. M. E. Conard and F. H. Fassett. At Tionesta, Forest Co., L. W. Lighty, J. A. Runk and E. L. Phillips. At Center Point, Montgomery Co., D. H. Watts, W. T. Wittman and Mrs. E. E. Smith.

March 7-8, at Avondale, Chester Co., R. P. Kester, S. W. Funk and M. H. McCallum. At Leechburg, Armstrong Co., F. Menges, Dr. M. E. Conard and F. H. Fassett. At Girard, Erie Co., L. W. Lighty, J. A. Runk and E. L. Phillips. At Salfordsville, Montgomery Co., D. H. Watts, W. T. Wittman and Mrs. E. E. Smith.

World's Wheat Crop.—According to the statistics published by the United States Department of Agriculture, the world's wheat crop for 1912 was the largest on record, aggregating 3,758,652,000 bushels, an increase of 226,110,000 bushels over 1911, and 175,633,000 bushels over 1909, the previous high year. By continents, Europe led, with 1,926,223,000 bushels, as compared with 911,503,000 for North America; 547,853,000 bushels for Asia; 194,947,000 bushels for South America; 81,894,060 bushels for Australasia, and 66,232,000 bushels for Africa. By single countries the United States led, with 730,267,000 bushels, as compared with 727,011,000 bushels for Russia; 366,370,000 bushels for British India; 334,871,000 bushels for France; 199,236,000 bushels for Canada; 169,510,000 bushels for Hungary; 166,190,000 bushels for Argentina; 165,720,000 bushels for Italy; 160,224,000 bushels for Germany, and 109,783,000 bushels for Spain.

BOOK OF FORMULAS

Home Formulas, Recipes and Processes.—Henley's Twentieth Century Home and Workshop Formulas, Recipes and Processes, edited by Gardner D. Hiscox, M. E.. Cloth bound; 6x9 inches; 787 pages. Published by The Norman W. Henley Publishing Co., New York City. Price, $3.00.

This is one of the most complete and valuable books of its kind that we have seen. It contains 10,000 selected household and workshop, money-saving facts and methods. These include short cuts, recipes and formulas which every householder and home worker needs and uses almost every day. They are arranged in alphabetical order, easily found, and are stated directly in simple language, easy to follow. Just a few of the groups of recipes include adhesives for wood, metal, cloth, paper, leather, etc.; antidotes for poisons; antiseptics; beverages; cleaning preparations and methods, dyes and dyeing; enameling and plating; fruit preserving; household formulas; laundry preparations and practices; veterinary formulas, etc. It is a veritable encyclopedia of handy facts for busy people.

Economy in Fencing.—The 1913 Bargain Fence Catalog should interest every prospective fence purchaser. It describes the famous Brown fence, tells how it is made, and how you can save money by buying it on the direct-from-factory plan. This fence is fully guaranteed and has an established reputation for strength and quality. The catalog is free. Address the Brown Fence and Wire Co., Dept. 121, Cleveland, Ohio.

Lime for Every Use.—The Charles Warner Co., Wilmington, Del., is offering lime of all kinds for agricultural uses. It will pay to investigate this line. Make sure of the kind that will give you the greatest amount of actual lime of the kind you want, and then write for prices on that grade.

Fertilizer Results.—With increased use of fertilizers farmers are as interested in the results obtained with different makes and brands as they are in results from certain grades of seeds or animals, or from different cultural methods. The Coe-Mortimer Co., 51 Chambers St., New York City, has established a record in results from its leading brands. The winning of the cup for eastern apples is only one of many such victories. It is what a fertilizer gives you in increased profits per acre that measures its value to you.

Cornell Dairy Students' Officers.—At the recent meeting of the Cornell Dairy Students' Association, officers were elected as follows: President, W. E. Ayres, Berne, N. Y.; secretary, Roy A. Clark, Norwood, N. Y.; treasurer, J. H. Lewis, Jordan, N. Y.; college secretary, Prof. H. E. Ross, Ithaca, N. Y.

Washing Cream Separator.—The Vermont Farm Machine Company has just perfected a new mechanical washer especially designed for washing separator parts. A folder describing this machine will be sent free upon request to the Vermont Farm Machine Co., Bellows Falls, Vt. Say you are a reader of Pennsylvania Farmer.

Age of Marketed Hogs.—The February Crop Reporter gives figures showing that the average age at which swine are usually marketed in the United States is 11 months. The lowest average is found in the northern states, Maine, New York and Michigan showing 9 months. Some of the southern states run as high as 15 months.

Banana Consumption.—According to a recent consular report, the United States, in the fiscal year ended June 30, 1912, imported 44,520,539 bunches of bananas, valued at $14,362,330, an average of 32.3 cents per bunch. The bulk of this supply was received from Jamaica, Honduras, Costa Rica, Panama and Cuba.

Wool Production.—The National Association of Wool Manufacturers reports the production of wool in the United States for 1912 at 304,043,400 lbs., as compared with 305,493,447 lbs., the average for the last 10 years. The average value per pound of scoured wool (excluding pulled wool) on October 1, 1912, was 55.4 cents, compared with 47.7 cents on corresponding date in 1911, and 51 cents in 1910.

Maine Seed Potatoes.—A dealer in Monmouth County, N. J., has purchased 63 carloads of seed potatoes in Aroostook Co., Me., and will have them ready for delivery when all danger of freezing is over. A little work in developing an acclimated strain of potatoes to suit local needs and conditions would mean a large saving to this community.

Clipping and Shearing Machines.—The new catalog of the Chicago Flexible Shaft Co. describes and illustrates a full line of horse clipping and sheep shearing machines. The growing appreciation of the benefits of clipping horses in spring and the proved advantages of machine shearing over the old hand-shearing methods are making these machines more popular and necessary every year. The new catalog shows clipping outfits from $7.50 to $80, and shearing machines from $9.75 up to duplicate power outfits for ranch work. An interesting line of grooming machinery and veterinary dental supplies is also described. The catalog will be sent free upon request. Address Chicago Flexible Shaft Co., 215 Ontario St., Chicago, Ill.

WHEAT FERTILIZERS

The Ohio Experiment Station at Wooster, Ohio, has issued Bulletin 243 on the "Effect of Fertilizers on the Physical and Chemical Properties of Wheat." The results obtained in this work show that altho differences in climate and season cause even greater variation in the character of wheat than soil or fertilizers, changing the chemical condition of the soil by the addition of fertilizers has produced marked differences in the same variety of wheat. Wheat grown on unfertilized soil where the smallest yield of grain was obtained, contained 50 percent of shriveled kernels. Increasing the nitrogen content of the soil accentuates the above condition. Phosphorus improves the physical appearance of the grain to the greatest extent.

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MR. E. A. ROGERS,
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A FARMER'S STATEMENT.—Hon. Edward Nordman, a farmer in upper Wisconsin, says that he can keep a dairy cow per acre, and that he makes $3000 per year from 60 acres of improved land. About cheap upper Wisconsin land, write, Wisconsin Advancement Association, 390 Caswell Bldg., Milwaukee, Wis.

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Farm Borders Salt Water
120 Acres, $2800, Easy Terms.
All the joys and pleasures of the seashore and all the profits of a good farm; cuts 40 tons hay, keeps 20 cows, lots of fruit trees and berries; only 1-3 mile to R. R. Station, village, markets, all advantages; borders salt water for long distance, splendid boating, bathing, fishing, shell fish, etc., fields level, easily worked, pasture watered by brook and spring; fine 8 room house, two barns, two big poultry houses, work shop, carriage and store houses, ice house and cream house, all in good repair; owner cannot occupy biggest bargain of the year at $2800, easy terms. Further information regarding this and many other good farms, some with livestock and tools included, page 24, "Strout's Farm Catalogue 35." Write today for free copy. Station 1765, E. A. Strout Farm Agency, Land Title Bldg., Philadelphia, Pa.

640 ACRES
SASKATCHEWAN, CANADA,
2 1-2 miles from Liberty. Good house, two wells, fine water, level land, fine soil, 600 acres broke, 400 acres ready for crop. Good for 10,000 bushels wheat this year. This section was selected by one who had first choice in this now famous wheat district. Price $25,000.00, half cash, balance terms to suit.
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FOR SALE—257 Acres—Mercer County, Pa. 2 dwellings—2 barns, fine soil—a bargain at $40 per acre. S. A. Gillespie, Greenville, Pa.

ONLY $275 BUYS SMALL FARM. Share in profit paid until buyer takes possession. Write quickly for views and particulars. Geo. W. Deen, Box 565, Waycross Ga.

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Best Lands. Best Crops. Best Homes. Biggest barns. Finest schools, churches, roads and transportation. For list of New York farms address:
McBurney & Co., Bastable Block, Syracuse, N. Y.

Grange

This department is conducted by R. P. Kester, Lecturer of Pennsylvania State Grange. Notes, queries, comments and news of grange work are invited from readers. Obituary notes and news of purely local interest can not be used. Address all communications for this department to R. P. Kester, Grampian, Pa.

TO ORGANIZE A GRANGE

A. E. B., of New Jersey, writes: "We had a meeting a week ago among 30 or more farmers to find out if we could start a grange. I was appointed as one of the committee of information. Being a reader of the Pennsylvania Farmer, I thought it would be a good idea to refer the matter to you to see if it would be possible to get some information as to how to start it. The farmers in this vicinity are afraid that it might involve too much capital without immediate return, and I thought that either a letter or a few words in your paper would show them the advantage of it. We have good men, bright and honest. * * * All of us would like to know how to start right, without involving any considerable sum of money until we would be able to show a return for the investment."

This is but one of many letters which show the awakening interest in grange organization everywhere. I shall not enter into any argument here as to the advisability of the farmers mentioned in the above letter organizing a grange. Suffice it to say, without debate, that it would be the best possible thing they could do. I hope the proper officers of the grange in New Jersey will write me for the name and address of the above correspondent in Somerset County, and attend to the call.

At least 13 charter members are necessary to organize a grange, four of whom must be women. The initiation fees, as well as the dues, are merely nominal; the minimum for adults is $3 for adult males and $1 for females. For minors, males, $1; females, 50 cents. The minimum annual dues for both sexes and all ages is 10 cents per month.

About two-thirds of all this money remains at home, in the local treasury. The balance goes to help maintain the work of the state and National granges. The charter, dispensation and equipment are purchased from the National Grange, for which $15 are paid, the money being paid out of the charter-member fees. A grange is organized by a deputy or other authorized member. There are 13 officers in every grange, and women are eligible to any of them.

There are four degrees in a subordinate or local grange; not more than two may be conferred at one meeting. The time and number of meetings are optional. Some granges hold weekly meetings; more hold them twice a month, and some once a month. The Pomona, or county granges, are held every three months. This grange confers one degree, called the fifth degree. Nearly all the business of the Pomona meeting is done in the fourth degree, and every fourth-degree member may attend, except when it is working in the fifth degree.

The State Grange meets annually, and its voting members consist of two delegates from each subordinate grange, which are the master and his wife, unless others are chosen. The sixth degree is conferred at the state grange. The National Grange meets annually, and it is composed of the masters of the state granges, and their wives. The seventh, and highest degree is conferred here.

In all grange meetings, the work is conducted in the fourth degree, and any fourth-degree member, that is, anyone who is a member in good standing of a local grange, can attend a Pomona, State or National meeting. As to returns, they begin at once and in any way the members may choose. We must remember that the grange is an institution with high aims, possibilities and accomplishments. We can not measure all returns in dollars and cents, any more than we can set a money value on the work of the church or the schools. But we can, by thus co-operating, save as well as make money from the start. The Patrons' fire insurance companies, the buying from grange contract houses, co-operative selling, all these and many other avenues are open to grangers, enabling them to save many times the small annual fees. Besides this, the effect that united effort brings on state and national affairs will bring, as it has brought, great good to all. Do not hesitate to organize.—R. P. Kester.

WARREN COUNTY POMONA MEETING

Warren County Pomona No 10 will meet with Brokenstraw Grange, at Youngsville, Pa., March 6 and 7. A program of unusual promise has been arranged. Included in the discussions are the following subjects: What are the most valuable features of the literary work, and how can they be strengthened. Should subordinate members be governed or influenced in political matters by the instructions or attitude of the State or National grange? Should a farmer get a riding plow for himself before getting a vacuum cleaner for his wife? Value of rest rooms in market towns. The future of the Pennsylvania farmer. Will the marches and "hikes" being conducted by the suffragette leaders help advance their cause What can farm women do in winter to make the summer work easier?

A lecturer's conference and women's hour will be held. A fifth-degree session will be held on Thursday evening for initiation and other fifth-degree work. It is expected that one of the officers of the State Grange will be present to exemplify the unwritten work. A large attendance is desired.

McSPARRAN'S GRANGE NOTES

Ballot Reform

One of the primary causes for corruption in politics, and the ability of bosses to dictate the voting of a large number of citizens, is that our ballot laws are and have been arranged in such a way that whenever it was necessary to know how a particular person voted some provision of the law was arranged to compel the giving of that information. The direct purchase of votes is entirely dependent upon the ability of the buyer to prove that the bought "delivered the goods"; and the promises of future office and preferment which are such a large factor in the maintaining of a political machine would be practically useless unless there was some way by which the person so bribed could be compelled to vote as the machine dictated.

The ballot laws that have been passed from time to time in the last generation, have been so constructed as to discourage independent voting by the cutting of tickets. There are many people who, in their honest judgment would like to choose certain candidates from each party, but when it comes to going into a dimly-lighted booth and hunting thru a ticket as big as a newspaper, with the danger of a wrong marking throwing out the whole ticket, they, even tho intelligent, simply put a cross in the square for a straight ticket and go out with a half satisfied feeling that they did the best they could under the circumstances.

There are ballot changes suggested by bills that have been introduced in the legislature this session. If the people of the state want to see Pennsylvania politics cleaned up thoroly, I can think of no one move that will do more in that direction than to see to it that this legislature enacts a ballot law that will combine a sure and easy marking with absolute secrecy of voting.

The question then comes: How can this be reached? We are of the opinion that it has not been done, not because of the difficulty in arranging such a law, but because the legislature has had too many members who did not want real independent secret balloting. Hence, in the first place, to get such a law a public sentiment must be aroused that will insure a majority of the members of each house in favor of a simple and honest law.

There are two general principles that must be observed for the making of real ballot reform: First, the possession of the ballot by the voter in ample time to consult whom he will as to the marking or any information he may wish to procure about a candidate or candidates; say, three days before election, at the very latest, the ballots should be distributed broadcast. There is no advantage in an official ballot, except to give excuse for assistance in the booth. It should be made easy for the voter to get ballots, more than one if he wants it. He can take one already marked from the boss, and another he can take to a trusted friend, or mark it himself. The principle is that each voter must be assured of a ballot that he can have to mark exactly as he pleases, without anybody's dictation.

The second principle that must be observed is absolute secrecy of depositing the ballot. There is a very simple way by which this may be done: Official envelopes and no assistance whatever in the booth. When the voter states his desire to cast his ballot and his qualification has been assured, the officer in charge would give him an official envelope (given out only by the election board and not allowed to be duplicated or distributed by anyone else) and a ballot. The voter must then be required to go into the booth, drop the curtain and place in this envelope, absolutely without assistance for any reason, the ballot that he wishes. He then seals the envelope and puts it in the ballot box. No number should be on the envelope or any mark by which the ballot of any person could be designated. This would give the voter who is under one or another form of obligation a chance to exercise his franchise in a sovereign manner. He could take a ballot from anyone who wanted him to vote as they desired. He could take any money that might be offered him, and then when he goes into the booth he can reach into his inside pocket and draw out the ballot that he wants to vote, put it in the envelope and deposit it in the box, and no one could learn how he voted. Such a ballot law would be simple and effective, but of course it will be hard to get unless the people demand it and hold their representatives responsible for its enactment.—John A. McSparran.

NEED FOR LEADERS

Every movement needs leaders. Progress in any direction is made by the multitude following the lead and direction of those who have a vision of better things. A leader is necessary to focalize thought and unify action. Neighborhoods improve fastest where someone sets the pace and unconsciously incites others to action.

A real leader is not a boss. He inspires rather than commands. He gets others to work and pushes them to the front, himself keeping in the background. He inspires confidence because he is unselfishly earnest. He centers the attention and harnesses the energy of a whole community to a given work. He has the vision and leads others to see it. He sets people to work—to working together. Working together unifies, and breaks up neighborhood "sets" and cliques. It dispels the petty jealousies and stops the bickerings and backbitings. Work begets strength—power for the up-grade. Victory—success means team work. Team work demands a captain, a leader. Oh, for more leaders!—R. P. K.

S. R. Feil
Pres.
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Tell Me How Many Head of Stock You Have

and I'll feed them 60 days before you pay. I'll show you how to make your farm animals grow faster—thrive better—put on more flesh on no more feed—make you more money.

I'll Rid Them of Worms or No Pay

I'll drive out the blood-sucking, life-sapping, disease-breeding parasites, which multiply in the stomach and intestines, killing your hogs and sheep, starving your horses and cattle, and stealing your feed and profit. I'll send you enough Sal-Vet to last all your stock 60 days. Simply put it where all your farm animals can run to it freely. They will doctor themselves. Don't send any money—just the coupon. Fill it out and mail today.

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Sal-Vet is a wonder-working medicated salt which completely rids farm animals of their greatest enemies—the stomach and intestinal worms. These deadly pests are the cause of 90% of all live-stock diseases. They keep farm stock in a poor, weakened, money-losing condition—they are the first step to hog cholera, swine plague, horse plague and other contagious diseases.

How SAL-VET Prevents Diseases

Sal-Vet prevents heavy losses when disease breaks out in your neighborhood because it kills and expels these deadly, life-sapping pests and puts every animal on your farm in a healthy, vigorous, worm-free condition—enabling them to better resist these deadly plagues. It sharpens the appetite, improves digestion and makes all stock grow into profit fast because it helps them get the good of all their food. Being a salt, animals like it and run to it freely—and

They Doctor Themselves

It requires no mixing—no drenching—no dosing—no trouble at all. Leading agricultural colleges and all prominent live-stock authorities endorse it.

Let me send you a 60-day supply without a penny of pay in advance.

Send No Money—Just the Coupon

Fill out the coupon, tell me how many head of stock you have, and mail it to me today. I'll ship you enough Sal-Vet to last all your stock 60 days. You simply pay the freight charges when it arrives and at the end of 60 days report results. If Sal-Vet does not do what I claim you won't owe me a penny. Send the coupon NOW. Address

SIDNEY R. FEIL, Pres. [110]
THE S. R. FEIL CO. Mfg. Chem.
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Proof That Proves from Actual Users

"Sal-Vet has been of great service to us; it has kept our hogs and pigs free from worms and, in addition, proved to be a splendid tonic.—J. H. ESPY, Agriculturist, Southeast Alabama Experiment Station, Abbeville, Ala.

"For their own good, I would recommend Sal-Vet to all sheep men. It will destroy every stomach worm in the flock and keep your sheep and lambs free from them and at the same time keep the flock in the pink of condition and health."—ROBERT S. BLASTOCK, Mgr. Sheep Dept., Walnut Hall Stock Farm Donerail, Ky.

"I cannot find words to express how much I think of Sal-Vet. Hogs all around my place had cholera, but I did not lose a single one of mine, and all winter they continued to look just fine." WM. CAMPBELL, Route No. 10, Decatur, Ind.

"Before getting your Sal-Vet I had lost thirteen of my best hogs, but since feeding Sal-Vet I did not lose a single one and every animal is in fine condition."—(Signed) GEO. MOHLN, Route No. 1, Pittsburgh, Kansas.

"I have given Sal-Vet a thorough trial with most gratifying results. My herd of pure bred Berkshires contracted a bad cough and continually got worse, until I gave your Sal-Vet to them. After two weeks of the treatment, not a hog was coughing, and all are as sleek as moles."—E. DANA SUTCLIFF, Shickshinny, Pa.

PRICES 40 lbs., $2.25; 100 lbs., $5.00; 200 lbs., $9.00; 300 lbs., $13.00; 500 lbs., $21.12. No orders filled for less than 40 lbs. Never sold in bulk; only in Trade-Marked Sal-Vet packages.

60-day trial shipments are based on 1 lb. of Sal-Vet for each hog or sheep and 4 lbs. for each horse or head of cattle, as near as we can come without breaking regular packages.

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Ship me enough Sal-Vet to last my stock 60 days. I will pay the freight charges when it arrives, report results in 60 days and will then pay for it if it does what you claim. If it does not you are to cancel the charge.

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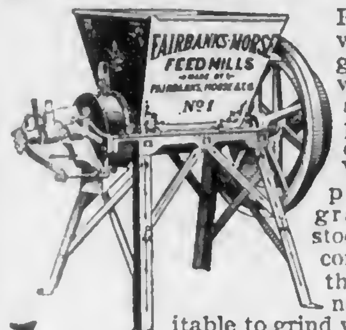

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grind mixed grain and corn on cob at the same time, insuring an easily digested mixture. These mills have light draft, large capacity, long life. Grind fine, medium or coarse. No gears to waste power. Wearing parts renewable at small cost. Capacities: 6 to 60 bushels an hour.

Grind Cheaply—Use a Jack of all Trades Engine for power. It runs on Kerosene or Gasoline. An outfit will save its cost in a short time and will give years of service.

Write for Catalog FC 1732 stating your requirements.

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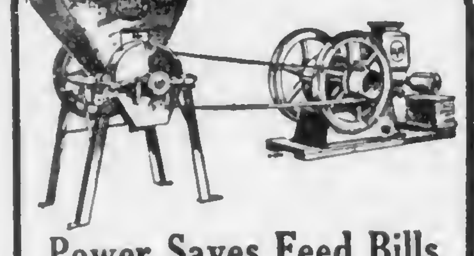

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The Rumely Feed Mill is the right mill to grind feed—made of the best materials—least number of parts—easily adjusted.

Send for Data-Book No. 344, on the Rumely-Olds Engine and information about this feed mill. Ask the name of our nearest dealer.

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MORE POTATOES PER ACRE

Think of finding one to eleven $5 bills in the furrow, on every acre you plant. It's been done many times. Plant the spaces you skip, sell the potatoes, and you've got the money. No extra land, no extra work. It costs no more to prepare ground, fertilize, cultivate, spray and dig a perfect stand

IRON AGE (Improved Robbins) **Potato Planter**

This machine soon pays for itself and yet puts real money into your pocket. One seed piece in every space and one only. Uniform spacing. No injury to seed. Ask your dealer to show it and write us for free booklet, *"100 per cent Potato Planting."* We make full line Potato machines, Garden tools, Sprayers, etc.

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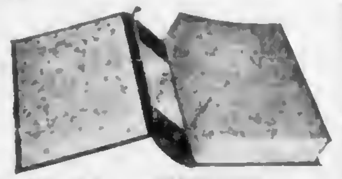

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214 So. 12th St. Philadelphia, Pa.

Live Stock

IMPORTANCE OF WARM WINTER QUARTERS

Some farmers say that hogs "eat their heads off" in the winter, and consequently they will not winter shoats and fall pigs. Of course, the boar and breeding pigs must be kept over, and the writer has found that with warm pens shoats and fall pigs will grow as fast in the winter as in summer and be just as profitable to their owner. To do their best, they need some succulent food in the place of the grass which they eat in the summer. They will eat considerable clover or alfalfa hay when they can get it. They will eat a little silage, but will root it over and pick out the kernels of corn. By forethought a plentiful supply of cheap succulent feeds can be provided, and hogs kept as cheaply in the winter as in summer, but they must not be allowed to suffer with the cold. We feed pumpkins, boiled potatoes, cabbage, turnips, rutabagas and beets. Hogs will eat sparingly of these vegetables raw, but ravenously when boiled, with a little corn meal added. Skim-milk and buttermilk will make an excellent addition to their diet, if it can be had, and I would not like to undertake wintering young pigs unless I had some milk for them.

Hogs need comfortable quarters in cold weather more than horses and cattle, because their hair is coarser and thinner. Our best breeds of hogs have but little hair. Formerly, our pens had two compartments, the one open and uncovered, where the trough was stationed and the feeding done, and the other enclosed (except the door), having a tight roof and a floor raised a foot higher than the floor of the feeding compartment, to prevent the water from running in and wetting the bedding. A piece of old carpet was tacked up over the doorway and hung down in cold weather. The hogs could push it aside when going out and in. In fair weather, they were let out to exercise in a small lot, about an hour before feeding time, so they could be called back before exercising too much. They would exercise too much for rapid growth, if given the chance. When the actual process of fattening is begun, exercise is not necessary nor desirable. Better get them to eat, and lie down on a good straw bed.

It is an excellent plan to have a narrow roof over the feed trough, to prevent it from being filled with rain or snow. This saves the trouble of climbing into the pen to bail it out. Our pen was as good as any of our neighbors', and better than some. One neighbor had no pen at all. His hogs ran in the road, or wherever they saw fit, and slept in the barnyard, piled on top of each other.

By accident we learned a better way of wintering hogs. After our basement barn was built (which is 50x70 feet), I bought four pigs of the same litter, as nearly alike as I could pick. I placed two of them in one of the pens described above, and the other two in a pen built in the basement of the barn. They were all cared for by myself, given the same kind of feed at the same hours, and as much as they would eat up clean. When killed in the spring, no person would have believed they were of the same litter. Those kept in the barn basement were nearly a third heavier than those kept in the old pen, and had not consumed any more feed—I think hardly as much. Animals kept in a cold place have to consume more grain in order to maintain the warmth of their bodies.

I know it pays to winter hogs when kept in a warm place, and one of the best places is in the basement of the barn. I know some will object to having a hog pen in the barn on the supposition that the foul smell is objectionable. That is a fallacy. There is no more foul odor in our barn than if no hogs were kept there. Hogs are the cleanest animals in the world when given a chance to keep clean by having their pen cleaned every day, as it should be. Our hog pen, horse stalls and cattle stalls are cleaned every day, and clean bedding supplied.—J. W. Inghram, Bradford Co., Pa.

CHAMPION SHORTHORN BULL AT LANCASTER CO., FAIR.
Owned by C. L. & T. M. Patterson, Washington, Pa.

LIVE STOCK INSURANCE

The Union Stock Yards at Chicago has instituted the plan of charging 10 cents per carload of stock to provide fire insurance. This sum is turned over as a premium to a large eastern insurance company which becomes liable to owners for loss or damage by fire to cattle, hogs, sheep and goats, while in the yards. Horses are not insured.

So far as we know, this is the largest live stock insurance project in this country. Important as it may be to the man who markets directly in Chicago, a large percentage of stock owners do not fall in this class at all. Those who do, receive protection for only a very brief period in the life of the insured animal.

This leads one to wonder whether we will ever attack the live stock insurance problem with anything like European completeness. In these older countries live stock insurance has been developed to a degree that amazes the average American. A large percentage of their farmers are so near the margin that the loss of an uninsured pig is a serious matter. To a man who has only a few acres and a horse and a cow or two, a loss of one of these larger animals may mean life-long financial embarrassment. He can not recoup himself from the ample resources to which his American brother need only to apply a little industry.

Under the spur of such conditions, Europe has tried almost everything from the local mutual life insurance company to the great state-aided ventures. Their experience can give us many suggestions now that may be indispensable if we ever reach the condition of small farms so prevalent in some parts of the world.—J. O. Rankin, Minn. University Farm.

NEW JERSEY CANAL CONTROL

The railroads now have control of 90 per cent of the canals in New Jersey, nearly all of which have been closed up, some of them in a way that will make it impossible ever to reopen and operate them. Jerseymen should resist every suggestion for the further abandonment of waterways, and should sustain every effort that may be made to regain control of those that have already been turned over to the railroads. Some may question the practicability of water transportation in these days of "rush" orders, but no one can dispute the claims that publicly controlled waterways keep down freight rates, and that should be sufficient in most cases when questions arise either as to canal abandonment or canal construction.—D. T. H.

FITS THE FIELD

I am more than pleased with Pennsylvania Farmer. I take several agricultural papers, but Pennsylvania Farmer leads them all in practical instruction and farm news for a Pennsylvania farmer.—H. B. Larned, Master, Huntington Creek Grange, 398, Huntington Mills, Pa.

ALFALFA

All Northern grown, guaranteed to be 99 percent pure and free from dodder. Write for free sample on which we invite you to get Government tests. This seed should produce hay at $60 per acre annually. Free instructions on growing.

GRAIN AND GRASS SEED

Northern grown and of strongest vitality. We handle export grade only and can furnish grass mixture suitable for any soils. Write for catalog.
WING SEED CO., Box 253 Mechanicsburg, O.

SWINE

I have started more breeders on the road to success than any man living. I have the largest and finest herd in the U. S. Every one an early developer, ready for the market at six months old. I want to place one hog in each community to advertise my herd. Write for my plan, "How to Make Money from Hogs." C. S. BENJAMIN, R.F.D.3, Portland, Mich.

Famous O. I. C.'s—Choice gilts and bred sows, and a fine bunch of Sept. pigs. Pairs not akin. S. Royer, Rushsylvania, Ohio.

Sunny Bank Farm Berkshires Both sexes; Masterpiece, Longfellow and Trueworth breedings. Reasonable. Reg. free. A. F. Jones, Box 117, Bridgehampton, L. I.

BERKSHIRES—Fall pigs and service boars. Stock and prices right. White Holland Turkeys $3.50, raised on farm range. W. A. Lothers, Peru Lack, Pa.

FOR SALE—Thorobred Berkshire Boar. Rivals Majestic Lee. Farrowed April 9, 1912. Inquire W. J. Gibson, Mgr. Treadway Farms, Willoughby, O.

Large Berkshire Swine. Registered High grade. Prices reasonable. Write HOME FARM, CENTER VALLEY, PA.

Five High-Classed Poland China Boars

FOR SALE, that are outstanding in quality and are from noted prize-winning ancestry; are fit to head good herds; one last fall's yearling, price $35.00. Four last March boars, price $30.00 each. For further particulars, address
C. S. EPPLEY. - ZANESVILLE, OHIO.

Large Type Poland Chinas—Service boars, sows bred to champion boars for March and April farrow. Fall pigs, either sex. Prices reasonable. L. C. McLaughlin, Pleasantville, Ohio.

Poland Chinas and Delaines. Well bred pigs and rams for sale.
C. OWEN CARMAN, Box C, Trumansburg, N. Y.

POLAND CHINA—Big type service boars, yearling sows, gilts, bred for spring farrow also fall pigs. Prolific growthy smooth strain. F. A. Kinsey, Lakeville, O.

Chester Whites—Choice registered stock of both sexes of serviceable age for sale. Write your wants. J. A. Roak, Rt. 4, New Castle, Pa.

MULEFOOT HOGS

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Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., Feb. 24, 1913.

Butter offerings were light and fancy stock was well sold up. Prices dropped 1 cent at the beginning of the week, but were revised later. Under light receipts eggs strengthened and advanced 15 cents per case. Fine dressed poultry was scarce and in good demand. Market steady. Fruits and vegetables showed improvement. Cabbage and onions brought fair prices and were well sold up.

Butter.—Western creamery, 38c; extras, 36c; firsts to seconds, 30@35c; special prints, 42@45c; near-by prints, 39c.

Cheese.—New York full cream, 18c; skims, 11@14c, according to quality.

Eggs.—Candled, 25@27c doz.; extras, 23c. Current receipts at $6.30@6.45 per standard case.

Poultry.—Fowls, 16@16½c; old roosters, 12@12½c; spring chickens, 17@18c; ducks, 18@19c; pigeons, 18@25c pair; turkeys, 19 @20c.

Dressed Poultry.—Western fowls, 15@ 17½c; roosters, 11½@12c; chickens, 15@ 18c; turkeys, 19@20c.

Vegetables.—White potatoes, choice, 70@ 73c bu. Onions, 25@40c bu. Cabbage, $7.00@10.00 ton. Lettuce, $1.50@2.25 basket. Cucumbers, $2.75@3.50 basket. Celery, 25@60c bch. Spinach, $1.00@1.25 bbl. Kale, 60@75c bbl. Egg plant, $1.50@2.00 box. String beans, $2.00@3.00 bu. Peas, $2.00@4.00 basket Peppers, $1.50@1.75 carrier. Tomatoes, $1.00@2.00 carrier.

Fruit.—Apples, choice varieties, 25@75c hamper, $2.00@3.50 bbl. Cranberries, $5.00 @8.50 bbl.; $1.75@2.50 crate.

Hay and Grain.—No. 1 timothy, new, $18.00@18.50; No. 2, $15.50@16.50; No. 3 do., $13.00@14.00. No. grade, $8.00@10.00 Clover mixed, No. 1, $14.00@14.50; No. 2 do., $12.00@13.00. No. 1 tangled rye straw, $13.50@14.00; No. 1 wheat straw, $10.50@ 11.00; No. 1 oat straw, $11.00@11.50. New shelled corn, No. 2 yellow, 56¼@57c; No. 3 yellow, 55@55½c; new cob, 57c per 70 lbs. No. 2 red wheat, $1.02½@1.03½; No. 3 do., 97½@98½c. No. 2 white oats, 40@ 40½c. Standard white, 39@39½c; No. 3 white, 38@38½c.

Hides and Skins.—Steers, abattoir, 17@ 17½c; do country, 14@14½c. Cows, abattoir, 15@15½c; do. country, 13c. Bulls, abattoir, 13c; do. country, 11c. Calf skins, Nos, 5 to 12 and up, $1.35@2.45; do. green. 13@14c lb.

Seeds.—Timothy, $3.15@3.25 bu.; clover, white, $25; do. crimson, $6.25; do. mammoth, $14.50; do. sweet, $13.00; do. alsike, $13.25; red top, per bu., $13.50; alfalfa, $7.00@10.00; Canada field peas, $2.35; vetch, $8.50; rye, winter, $1.35; spring, $2.25; soy beans, $3.25; barley, $2.50; buckwheat, $1.50; cowpeas, $3.00@3.25; millet, $1.90@2.75; oats, $1.20; wheat, $1.70@ 2.00.

Coffee.—Rio, 7s, 13c; Santos, 4s, 15c. Mild Coffee—Cordova, 15¼@17½c.

Provisions.—City beef, smoked and air-dried, 22@23c. Beef hams, 31@33c. Pork, family, $21.00@22.00. Hams, cured, 13¾ @14¼c; skinned, 13½@14¾c; smoked, 16½@18c. Other hams, smoked, city cured as to brand, 16@18c. Picnic shoulders, 9¾ @10¼c; do. smoked, 11½@12c. Bellies in pickle, 13½@14½c. Breakfast bacon, as to quality, 17@22c. Lard, refined, 11¼@ 12c; do. in tubs, 11½@12c; do kettle rendered, 11@11½c. Tallow, primo city, 6⅞ @7c; do. country, 7c; do. dark, 5¾c; do cakes, 7¼c.

Sugar.—Cut loaf, $5.15 cwt.; cubes, $4.60; powdered, $4.45; granulated, $4.35; standard granulated, $4.40; crystal A, $4.35.

Flour.—For 196 lbs., in wood, winter clear, new, $4.10@4.30; do. straight, new, $4.50@4.75; favorite brands, $5.00@5.35. Rye flour, Penna., $3.60@3.75.

BALTIMORE PRODUCE

Baltimore, Md., Feb. 24, 1913.

Choice grades of butter were somewhat scarce; other grades were well supplied and steady. Egg receipts are still in excess of the demand; prices are barely steady. Live poultry is in fair trading at last week's figures. Fruits and vegetables were about normal for this season. Prices steady.

Butter.—Creamery, fancy, 36@37c; do., choice, 35@36c; prints and blocks, 35@38c. Maryland and Penna. rolls, 20@22c; prints, 20@21c. Process, 25@27c.

Cheese.—Flat, 17½c; Daisy, 18@18½c.

Eggs.—Md. and Penna., firsts, 20c; western, 20c; southern, 19c.

Live Poultry.—Hens, 15@15½c; chickens, 19c; old roosters, 9@10c. Turkeys, 21@ 22c. Ducks, 16@17c. Geese, 14@15c. Guinea fowls, 30@50c each.

Dressed Poultry.—Turkeys, 21@22c; chickens, 18@19c; roosters, 10@11c; ducks, 19@21c; geese, 11@17c.

Vegetables.—Potatoes, white, 55@60c bu. Sweets, $2.25@2.75 bbl. Cabbage, $1.25@ 1.50 crate. Danish, $8.00@9.00. Onions, 25@40c bu. Lettuce, 75c@$1.00 basket. Egg plant, $2.00@2.25 crate. Peppers, $1.50 @1.75 crate. Squash, $1.50@2.00 basket. Spinach, 40@50c box. Cucumbers, $3.00@ 3.50 basket. Beans, green, $2.25@2.75 basket. Celery, $1.50@2.25 crate. Turnips, 20@25c box. Cauliflower, $2.50@2.75 bbl. Horseradish, $1.25@1.65 box. Beets, 30@ 35c bu.

Fruit.—Apples, new, $2.00@3.50 bbl.; 50c $1.00 bu. Cranberries, $8.00@9.50 bbl.

Grain.—Wheat.—No. 2 red western, $1.06¾; spot, $1.07. Corn, spot, 54¾c; contract, 54¾c. Oats, No. 2 white, 39c; standard white, 38c; No. 3 white, 37c. Rye, 55@65c.

Hay and Straw.—No. 1 timothy, $18.50@ 19.00. No. 2 timothy, $17.00@17.50; No. 3 do., 14.00@15.50. Choice mixed, $15.00@ 15.50. No. 1 clover, $13.00@13.50. No. 2 do., $11.00@12.50. No. 1 tangled rye straw, $12.50@13.00. No. 1 oat straw, $9.00@ 10.00. No. 1 wheat straw, $8.00@9.00.

Millfeed.—Spring bran, $23.00. Middlings, flour to white, 26.00@28.00; western middlings, 24.00@24.50; city mills mids., $24.00@24.50.

NEW YORK PRODUCE

New York City, Feb. 24, 1913.

There were heavy shipments of butter received during the latter part of the week. Prices were barely steady on good grades. Unfavorable weather has decreased the egg supply so that some advance is looked for during this week. Live poultry is quiet and steady. Fruits and vegetables are about normal and steady, except spinach, which is in heavy supply and of inferior quality.

Butter.—Creamery firsts to extras, 32½@ 35½c; thirds to seconds, 23@32c; factory, 18@23c; state dairy, 23@33½c; packing stock, 17@21c; process, 19@26½c.

Cheese.—Whole milk special, 18c; do., common to fancy, 16@17¾c; skims, 8@ 14¾c.

Eggs.—State and near-by, 23@28c; fresh gathered, 18@23c; mixed, 20@22c; refrigerator, 14@17c.

Dressed Poultry.—Turkeys, dry, 19@ 24c; chickens, Penna., 15@28c; fowls, 14 @17c; old roosters, 13½c; ducks, 16@19c; roasters, 19@20c.

Live Poultry.—No quotations.

Grain.—Easy. Wheat, No. 2 red, $1.10½; No. 1 Northern, $1.04½. Corn, 56¼c. Oats, standard white, 39c.

Vegetables.—Potatoes, state, $1.85@2.00 per 165-lb. bag. Cabbage, 90c@$1.00 crate. do. Danish, $7.00@9.00 ton. Green beans, $1.50@3.25 basket. Carrots, $1.00@1.75 bag. Cucumbers, $1.00@1.50 dozen. Lettuce, 15@40c basket. Squash, $1.50@ 2.00 bbl. Celery, $1.50@4.50 case. Horseradish, $3.00@4.50 cwt. Parsnips, 75c@ $1.00 bbl. Turnips, 50@75c.

Fruit.—Apples, $1.75@4.00 bbl., according to variety. Pears, 50c@$1.10 basket. Cranberries, $6.00@10.00 bbl.

BUFFALO PRODUCE

Buffalo, N. Y., Feb. 24, 1913.

Butter.—Steady and strong. Creamery choice, 37@38c; choice dairy, 31@33c.

Cheese.—Quiet and steady. Fancy, 17½ @18c; good, 16½@17½c.

Eggs.—Steady. Fancy, 26@27c; state, fresh, 22@23c; candled, 22@23c; storage, 18@20c.

Dressed Poultry.—Quiet. Turkeys, per lb., 23@25c; fowls, fancy, 16½@18c; chickens, 16@19c; old roosters, 13½@14c; ducks, 20@22c; geese, 17@18c.

Live Poultry.—Firm. Chickens, 16½@ 17½c; ducks, 18@20c; geese, 15@17c; turkeys, 20@23c.

Vegetables.—Potatoes, slow. Home-grown, 63@64c bu. Cabbage, 50@75c per 100. Onions, 40@65c bu. Beans, green, $2.75@ 4.00 hamp. Turnips, 75@80c bbl. Celery, 40@50c doz. Lettuce, 40@70c.

Beans.—Quiet, steady. Marrow, fancy, $3.30@3.40; medium, $2.50@2.60; red kidneys, $2.75@3.00.

Fruits.—Apples, $2.25@3.25 bbl.; 50@ 75c bu.

Honey.—Firm. No. 1 fancy, 17c; No. 2 new, 13@15c; dark, 12c.

Hay.—Weak. Timothy, choice, on track, $17.50; No. 2 do., $16.00; No. 3, $15.00; light mixed, No. 1, $13.00@14.00; rye straw, $10.00@11.00; oat and wheat straw, $9.00@ 9.50.

Feed.—Steady. Spring bran, $21.00 ton. Standard mids., $21.50. Corn meal, $23.50. Gluten, $27.75. Hominy, $24.25. Oilmeal, $30.00.

WASHINGTON PRODUCE

Washington, D. C., Feb. 24, 1913.

Florida vegetables are active. New York celery is in heavy trading. Other commodities are normal at about steady prices.

Eggs.—Near-by, fresh, per dozen, 20c; southern, per dozen, 19c.

Cheese.—New York, new, per pound, 19c; flat, 19c.

Butter.—Best prints, per pound, 39c; tub, 38c; process, 27@28c; undergrades, 25c.

Live Poultry.—Hens, per lb., 14½@15c; roosters, 10c; springers, 18@20c; turkeys, 20@22c; geese, live, 12@15c; ducks, 16@ 18c.

Vegetables.—Potatoes, bbl., $1.25@1.50; 50@80c bu. Onions, 50@90c per 100-lb. bag. Lettuce, per bas., $1.00@1.25. Beans, $1.50@2.50 basket. Peppers, per crate, $1.00@1.50. Egg plants, per box, $1.50@ 3.00. Squash, per bbl., $1.25@1.75. Beets, 50c@$1.00 per 100 bchs. Mushrooms, per lb., 25@40c. Carrots, 1½@2½c bch. Cabbage, $1.00@3.00 bbl. Radishes, 50c@$1.00 per 100. Cauliflower, $1.25@1.75 crate. Apples, $1.50@4.50 bbl.

YORK PRODUCE MARKETS

York, Pa., Feb. 24, 1913.

The markets were well attended the past week, owing to milder weather. Eggs declined from 2 to 4 cents per dozen. Butter is still firm. Other prices show little change.

Butter.—Country, 32@35c; separator, 33 @36c. Milk, 6c per qt.

Eggs.—20@24c doz.

Poultry.—Hens, 14@15c. Dressed poultry, 40@80c.

Vegetables.—Potatoes, 10c half peck; 60c bu.; cabbage, 2@5c each; lettuce, 3 @10c; beets, 3@5c bunch, 10c per ½ pk.; radishes, 2@5c; turnips, 10c per ½ pk.; onions, 10c per ½ pk.; lima beans, 12c qt.; soup beans, 10c qt.; celery, 3@7c stalk; sweet potatoes, 10c per ½ peck; spinach, 10c per ½ peck; parsnips, 10c per ½ pk.; sauer kraut, 5@8c qt.; lard, 13@16c lb.; corn meal, 5@6c qt.

Fruit.—Apples, 10@25c a half peck; pears, 12@15c per ½ pk.; chestnuts, 15c qt.; walnuts, 12@15c per ½ peck; strawberries, 25@30c box.

Retail Grain Market.—Wheat, $1.13; corn, 68c; oats, 50c; bran, $1.30 a cwt.; rye, 78c; middlings, $1.55 a cwt.

Wholesale Grain Market.—Wheat, $1.03; corn, 55c; oats, 40c; rye, 68c.

WILMINGTON PRODUCE

Wilmington, Del., Feb. 24, 1913.

Market quotations are mainly steady with those of last week. Trading is fair and the supply about normal.

Fruits.—Apples, 50@80c basket; $2.75@ 4.00 bbl. Strawberries, 35@40c box.

Vegetables.—Potatoes, 75@85c bu.; $2.00 bbl. Cabbage, 75c@$1.00 bbl.; 25c basket. Onions, 40c basket. Celery, 35@60c doz. Spinach, $1.25 bbl. Sweet potatoes, 80@85c basket; $3.00@3.75 bbl. Kale, 75c bbl. Carrots, 10c ¼ pk. Lettuce, $1.50 basket.

Poultry.—Chickens, live, 16@17c; do., dressed, 18@19c. Ducks, 12c lb.; dressed, 16@18c.

Eggs.—24@25c; storage, 20c.

Butter.—Creamery, 30@33c; prints, 38@ 45c.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., Feb. 24, 1913.

The cattle market during the past week was very dull and weak. Prices dropped on all grades.

	Beef Cattle	Sheep and Lambs	Hogs
Total for week	4,746	11,115	4,790
Previous week	4,655	11,642	5,751

Best steers	$8.20@8.40
Choice steers	8.00@8.10
Good	7.50@7.75
Medium steers	7.00@7.25
Common steers	6.25@6.75
Bulls	4.75@6.50
Fat cows	5.00@6.00
Thin cows	2.75@3.25
Milk cows	40.00@70.00

Veal calves are easier.

Best calves	$11.00@11.50
Good to choice do	10.00@10.50
Medium	7.00@8.00
Common do.	6.50@6.75
Thin do.	5.00@8.00

Sheep have kept fairly steady, but lambs have declined.

Extra wethers	$6.50@6.75
Choice wethers	6.00@6.50
Good wethers	5.50@6.00
Common to medium	3.00@5.00
Ewes, fat	5.00@6.00
Extra lambs	9.25@9.50
Good to choice do.	9.00@9.25
Common to medium	6.00@7.00

The hog market continued firm thruout the week. Trading was normal at advanced figures, westerns selling at $12.00.

City Dressed Stock.—Choice classes of dressed meats are steady. Trade is normal. Steers, 10@13c; heifers, 9@12c; cows, 7½ @10½c. Veal calves, 14@16c; country dressed calves, 13@14½c; extra do., 15c. Sheep, 10@11c; extra wethers, 12c. Spring lambs, 15@16c. Hogs, 12@12¼c.

PITTSBURGH LIVE STOCK

Pittsburgh, Pa., Feb. 24, 1913.

Cattle receipts today were 90 carloads The market was firm to strong on all choice handy fat grades and best handy fat grades. Medium grades of such stock sold steady, as did bulls, fat cows and heifers.

Good to choice	$8.50@8.85
Good, 1300 to 1400 lb.	8.25@8.40
Medium to good, 1200-1300 lb.	7.65@8.00
Tidy, 1050-1150 lb.	7.70@8.10
Fair to medium, 900-1100 lb.	6.50@8.00
Common to good fat oxen	4.00@6.00
Common, 700-900 lb.	5.25@6.40
Common to good fat bulls	4.00@7.00
Common to good fat cows	4.25@6.75
Heifers, 700 to 900 lbs.	4.25@7.50
Bologna cows	3.75@4.00
Fresh cows and springers	25.00@80.00

Calves.—Receipts were 500 head. The market ruled steady on all grades.

Heavy and thin calves	$5.00@7.00
Veal calves	7.50@11.00

Hogs.—Today's hog receipts were 30 double-deck loads. The market has been good, prices going higher, and today saw another advance of 20@25 cents.

Prime heavy	$8.85@
Prime medium weights	9.05@
Heavy mixed	9.00@
Best heavy Yorkers	9.10@
Light Yorkers	9.10@
Pigs as to quality	8.75@9.00
Common to good roughs	7.50@7.90
Stags	6.50@7.00

The supply of sheep and lambs today was 15 double-deck loads. There was a good demand for all classes. Prices were about steady.

Prime wethers	$6.60@6.75
Good mixed	5.85@6.10
Fair mixed ewes and wethers	5.00@5.60
Culls and commons	2.50@4.00
Spring lambs	5.50@8.85

BUFFALO LIVE STOCK

Buffalo, N. Y., Feb. 24, 1913.

Cattle receipts today were 3,075 head. The market remained firm at former prices.

Choice heavy steers	$8.35@8.75
Medium	7.25@8.25
Yearlings	7.25@8.25
Plain heavy	6.50@7.15
Handy butchers	6.35@7.50
Good to choice fat cows	4.00@6.75
Good to choice heifers	6.75@7.75
Butcher bulls	4.75@7.00
Feeders	5.50@6.50
Stockers	4.25@5.40
Cows and springers	65.00@85.00

Calf receipts today were 1,000 head. The market was dull and 50 cents lower.

Choice veals	$10.50@11.00
Light and thin	4.00@6.50

There were 13,400 head of sheep and lambs on sale today. The market was strong and prices steady.

Choice lambs	$9.00@9.15
Poorer grades	6.00@6.50
Yearlings	7.50@8.00
Wethers	6.50@6.75
Ewes	5.75@6.25
Sheep	6.00@6.50

Today's hog receipts were 12,800 head Trading was active and the market strong at former prices. Prospects are good for the week.

Heavies	$8.90@9.10
Mixed and medium	8.90@9.10
Yorkers	9.10@9.15
Light Yorkers	9.10@9.15
Pigs	9.10@9.15
Stags	6.00@7.00
Roughs	7.80@8.10

NEW YORK LIVE STOCK

New York City, Feb. 24, 1913.

Cattle receipts were 3,959 head. The market is lower.

Steers	$5.50@8.75
Bulls	5.00@7.00
Cows	3.50@6.50

Dressed beef slow. Native sides, 10@13c; Texas, 9@10½c.

Calf receipts were 2,398 head. The market is steady.

Choice veals	$11.50@12.00
Good veals	8.00@11.00
Culls	6.00@8.00
Barnyard calves	4.00@5.50
Fed calves	6.00@8.00
Westerns	3.50@5.00

Dressed calves are slow.

City-dressed veals	13@18c
Country-dressed veals	11@15½c

Sheep and lamb receipts were 7,153 head. Sheep are steady and lambs firm.

Sheep	$4.50@6.25
Culls	3.25@4.25
Lambs	7.25@9.00
Culls	6.00@7.00
Yearlings	6.50@8.00

Hog receipts were 8,804 head. The market is higher.

Light to heavy	$9.00@9.10
Roughs	7.75@8.00

BALTIMORE LIVE STOCK

Baltimore, Md., Feb. 24, 1913.

Beef receipts for the week were 1,498 head. The beef supply was equal to meet the normal demand. Trading was good and prices remained at last week's figures.

Steers	$4.75@8.25
Heifers	4.25@6.75
Cows	2.00@5.40
Bulls	4.35@6.50
Fresh cows	$27.50@77.50

Sheep and lamb receipts were 3,728 head. Under a light supply the market is higher on sheep but lower on lambs.

Sheep	$3.50@6.50
Lambs	6.50@9.40

There were 13,945 hogs on sale during the week. Under greater demand for all classes of stock, the market has advanced and is firm.

Light western	$9.00@9.15
Heavy to medium	9.00@9.35
Near-by	9.00@9.15
Roughs	9.00@9.15
Pigs	8.00@8.35

Calf receipts for the week were 316 head. Most of the receipts were of unattractive stock, and under a fair supply the market dropped to $5.00@10.50.

ELGIN BUTTER QUOTATION

Elgin, Ill., Feb. 24, 1913.

The quotation committee of the Elgin Board of Trade this afternoon declared butter firm at 34½c a pound.

NEW YORK MILK QUOTATION

The wholesale milk price is $1.81 per 40-quart can for class C; class B, $1.91.

PITTSBURGH HAY AND GRAIN

Pittsburgh, Pa., Feb. 24, 1913.

Hay shipments continue far in excess of demands. The market is weak and dull. There is practically no demand for straw and arrivals are heavy, making a very unsatisfactory condition. No. 1 timothy, $14.50 @15.00; No. 2 do., $12.00@13.50; No. 3 do., $9.00@11.00; No. 1 light mixed, $13.00 @13.50; No. 1 clover mixed, $13.00@13.50; No. 2 do., $10.00@11.00. No. 1 clover, $12.00@12.50; No. 2 do., $8.00@10.00. No. 3 prairie, $10.00@10.50; No. 4 do., $8.00@9.00; No. 1 oat straw, $8.75@9.00; No. 2 do., $8.25@8.50; No. 1 wheat, $8.75@ 9.00; No. 2, $8.25@8.50; No. 1 rye, $10.25@ 10.50; No. 2 do., $9.00@9.25. Ear corn arrivals are more than sufficient to meet the limited demands. Market dull and weak. No. 2 yellow, 54@55c; No. 2 high mixed, 52@ 53c. Shelled corn receipts are ample. Market is very quiet. No. 3 yellow shelled, 52@ 52½c; sample, 50@50½c. Oats, are dull in sympathy with other markets. No. 2 white, 36½@37c; standard, 35½@36c; No. 3 do., 34½@35c; No. 4 do., 33@33½c. The demand for middlings is very slow, but bran has improved. Market dull. No. 2 white mids., $24.50@25.00; No. 1 brown mids., $22.00@22.50. Winter wheat bran, coarse, $22.50@23.00.; do., medium, $21.50 @22.00.

TOBACCO MARKET

Conditions are very quiet with but few sales, mostly at about $10 per cwt., which is $1 to $2 lower than in recent weeks. The report that some crops have been sold at $9 and $3 per cwt. is denied. Fifteen to 25 percent of the crop is still in the hands of the growers, they being more or less anxious to sell, as it is now necessary to turn attention to the preparation for the new crop. It seems, however, that the larger concerns are now supplied and that the local packers are unwilling to invest. The evident cause of the present situation with reference to the new crop is the presence of so much of the product of the two previous years. It is safe to predict that the whole of the new crop will find buyers sooner or later, and further declines in prices are not considered probable.

Tobacco growers of York County are planning an organization more or less similar to that of Lancaster County. A recent meeting there was addressed by Mr. E. K. Hibshman, the tobacco expert, who informed the interested growers as to the various advantages of such an organization, including government aided experimentation, the proper selection of seed and fertilizer, as well as proper cultivation. The success of this organization in one of the best tobacco sections of the state is much to be desired, as every additional effort along this line should strengthen the organization movement as a whole and help hasten the time when farmers shall be enabled to operate along more uniformly satisfactory lines, not alone in producing, but also in selling their tobacco.

According to a recently issued government report, 64,090,000 pounds of tobacco were grown in Pennsylvania in 1912, as compared with 65,320,000 in 1911; 64,500,000 in 1910, and 46,165,000 in 1909. Dry weather hindered planting, growth was slow and maturity late. Curing conditions were never better, the report says, and the product has good size, color and body, much better than that of 1911. The average yield per acre is estimated at 1,420 pounds and the average price, $8.50 per cwt.

The remarkable increase in the production of cigarettes is shown by the fact that revenue collections show a total of 13,188,821,772 in 1912, as compared with 9,828,682,000 in 1911. The other branches of the tobacco manufacturing industry show but slight gains, and even losses in some classes.—H. E. Tweed, February 24, 1913.

NEW JERSEY SEED INSPECTION

Dr. Jacob G. Lipman, director of the New Jersey Experiment Station, has taken up the task of enforcing the new seed law which went into effect on November 1. Under the provisions of this law, the Station must test all seeds offered for sale in New Jersey, as to their purity and germination co-efficient. Dr. Lipman believes that thousands of dollars will be saved to seed users of this state annually thru this measure. He will send agents thru the state to purchase seeds in the open market. The results of the tests will be made public thru bulletins to be issued by the Station. There are to be no prosecutions, no penalty being provided for the selling of inferior seeds, but Dr. Lipman believes that the publicity which the Station will give to dealers selling inferior seeds will have the desired result. Every citizen will be at liberty to submit samples of seeds to the Station for a test, and the result will be sent to such persons.—D. T. H.

FATTENING WESTERN LAMBS

The Perdue Experiment Station, at Lafayette, Ind., has just issued Bulletin 162 on the subject of fattening lambs. It says,

in part: ''Timothy hay in all rations where it was fed proved a very unsatisfactory feed for fattening lambs. Lambs fed shelled corn and timothy hay were very unthrifty. Lambs fed shelled corn and clover hay made more rapid and more economical gains than those fed shelled corn and timothy hay. Lambs fed shelled corn, cottonseed meal and clover hay acquired a much better finish than others fed a ration of shelled corn, cottonseed meal and timothy hay.''

Modern Strawberry Growing.—A new book by Albert E. Wilkinson, instructor and investigator in horticulture at Cornell University; 210 pages; 5¼x7½ inches. Bound in cloth. Fully illustrated. Published by Doubleday, Page & Co., Garden City, N. Y. Price, $1.10.

This is the first book giving complete discussion of strawberry growing that has been brought out in something like 20 years. Thus the book meets a widespread need for thoro knowledge of modern and approved methods. The discussion covers selection of site; treatment of soil and planting; insects and diseases and their control; picking, packing and marketing; care and renovation of old beds; winter forcing; propagation and breeding; costs, yields and profits, and a detailed discussion of varieties. The subject matter is handled in a simple and direct style, making the book a most useful one to every gardener and general farmer.

YORK COUNTY INSTITUTES

York County had, without doubt, the largest total attendance of any county in the state; no less than 8,500 people attending the five different institutes. The largest institute was held at Red Lion, where about 3,100 people were present during the two days. At this place the crowds were so large that two halls were used and filled during every session, the one hall being used for the accommodation of the ladies and the other for the men. At the first session between 400 and 500 boys and girls were present and comprised a most inspiring audience. Since the forming of the ''Boys' Corn Growing Clubs'' the boys and girls of this section are taking a much greater interest in agriculture. The formation of these clubs has been a wise step in the right direction, and it is a movement that should be taken up by every community.

A very interesting feature of the York County institutes were the excellent exhibits of all kinds of farm produce, one of the things which go a long way toward the making of a successful institute. York County is located in the best corn and tobacco section in the United States, and these people are particularly interested in these two crops. At Red Lion the corn was judged for the highest possible yield, and gave some very interesting results. An average sized ear was taken from each exhibit; they were shelled and the corn weighed. Reckoning 8,300 stalks to the acre, and with the supposition that every stalk would give an ear of that size, the highest yield from an acre was found to be 176 bushels of shelled corn, showing the possible yield that might be secured in this locality. Another very interesting feature brought out by this method of judging was the great difference in the proportion of the weight of cob to corn, showing the great possibilities for the increase of shelled corn by the judicious selection of seed.

There were some excellent exhibits of tobacco at this institute and the tobacco growers were very much pleased with the talks given them by E. K. Hibshman, on the raising of this valuable crop. The York County institutes, under the supervision of County Chairman G. F. Barnes, have increased in total attendance almost 10 times within a period of 10 years, a record that any county chairman can justly feel proud of. Mr. Barnes, however, very modestly gives the entire credit to the local committees and the people in each community. The fact of the matter is, however, that the York County farmers are very desirous of having more institutes, and at almost every place resolutions were adopted asking that hereafter the institutes be increased in number from five to eight.—Sheldon W. Funk.

SHORT WEIGHTS AND MEASURES

Mayor Blankenburg, of Philadelphia, has been urged to confiscate fruit and berries which, it is claimed, will be sent to the markets of that city from South Jersey in short-measure baskets. After receiving a communication from J. H. Schlegel, treasurer of the Farmers' Manufacturing Company, of Norfolk, Va., he sent word to the head of the New Jersey Department of Weights and Measures, of the charges coming from Norfolk. He also notified the South Jersey Fruit Producers' Association that if any products come to the Philadelphia markets in short measures, they will be confiscated. The Norfolk concern declared that it had knowledge of several million ''short'' baskets being sent into South Jersey. Mayor Blankenburg and the New Jersey officials will be on the lookout for this reported importation.—D. T. H.

UNION GRANGE ACTIVITIES

Union Grange No. 5, of Belleville, N. Y., is one of the oldest granges in the country. We have a fine hall, well furnished and all paid for, together with a membership of 350. At our last meeting we brought in an outside lecturer, who gave us a splendid address. At our next regular meeting a class of eight will be instructed in the first and second degrees. Our young people are greatly interested, and the grange is always on the lookout for their interests. On the evening of February 21, the grange gave a social for the Athletic Association of Union Academy.

GUINEA PIGS

A ''small boy,'' wishing not only additional pets, but also ''paying ones,'' would like to know about guinea pigs: (1) Are they desirable, or disagreeable to ''have around''? (2) What are their unpleasant features? (3) For a boy, are they likely to yield a prifit? (4) Is there any book published on their care, etc., and if so, by whom, or from whom can it be obtained? (5) Of whom can stock be obtained?—G. S., Dover, Del.

In answer to G. S., Dover, Del., I would say that I think it is very desirable to encourage children to have pets, if they will give them the proper care and attention.

In regard to guinea pigs, while they are interesting little pets, they are very seldom a source of profit. Just at the present time there seems to be a comparative scarcity, and some of the biological laboratories are paying higher prices than usual for them, but just as surely as day follows night, that demand will be over-supplied before long, as it was a few years ago, and guinea pigs will be a drug on the market again.

There is, of course, always some limited demand for them as children's pets, and for the fancy varieties there is a limited demand from the fanciers. If a person is successful in raising more than he wants to keep, and tries to raise his surplus, he is very apt to be greatly disappointed in the number he can dispose of to private individuals as pets, and he will be still more disappointed in the prices obtainable when he tries to sell them to dealers and pet stores.

The biological laboratories, as a rule, require the guinea pigs to be a uniform weight of 8 to 10 ounces. The only demand, therefore, for larger ones would be for pet purposes, at low prices. Occasionally among the fanciers one hears of some prize-winning guinea pigs bringing high prices, but not one person in a hundred is the fortunate one to obtain such prices.

During the winter, when home-grown green stuff is not available, it has been found that it costs about as much to buy oats, carrots, beets, hay, etc., for 50 guinea pigs as it would cost to feed a cow. In the summer it is a different matter, for guinea pigs eat voraciously of almost any green vegetables that humans eat, but they will also eat the parts not usually regarded as human food; besides this, they are fond of all kinds of grass and many weeds.

One should not, however, undertake to keep guinea pigs, or any other pets, without knowing how to give them the best care. Such details would make this article too long. I therefore suggest getting a good pet stock magazine, in which will be found much information about guinea pigs and other pets, also the advertisements of people who have such pets for sale.

As a general rule, if you wish to interest the ''small oy'' in pets that would be profitable as well as entertaining, it would be well to introduce him to any of the large number of birds or animals which are used for human food, such as fancy fowls, bantams, pigeons of the utility breeds, or if fur is preferred to feathers, there are the different varieties of hares and rabbits. —Howard Butcher, Bucks Co., Pa.

Milking Machines.—Milking machines of at least one type do not reduce milk flow. This statement is based on work done by the New York Experiment Station at Geneva, where hand milking and machine milking were compared, using them in alternation in 71 full lactation periods. Those interested in the details should secure a copy of Bulletin No. 353, which will be sent without charge. Address New York Experiment Station, Geneva, N. Y.

POULTRY HOUSES

It has been demonstrated beyond a doubt that the open-front house is the most profitable type to build. Plenty of fresh air is the secret of success. Circular 37, of the Perdue Experiment Station at Lafayette, Ind., gives several plans for such houses, which they have found from trials to be highly efficient. Colony house and trap nests are also discussed, together with plans for building the same.

FOOD INSPECTION

There were 447 different kinds of feeding stuff inspected and analyzed in New York during 1912. The results of this wide inspection may be found in Bulletin 351, of the New York Experiment Station, at Geneva, N. Y. In this bulletin the found analysis is contrasted with the guaranteed, and is valuable for all stock feeders.

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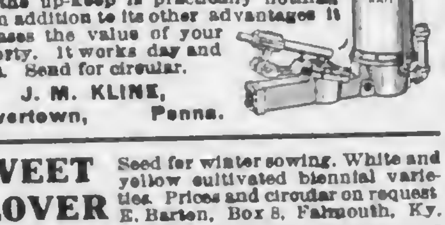

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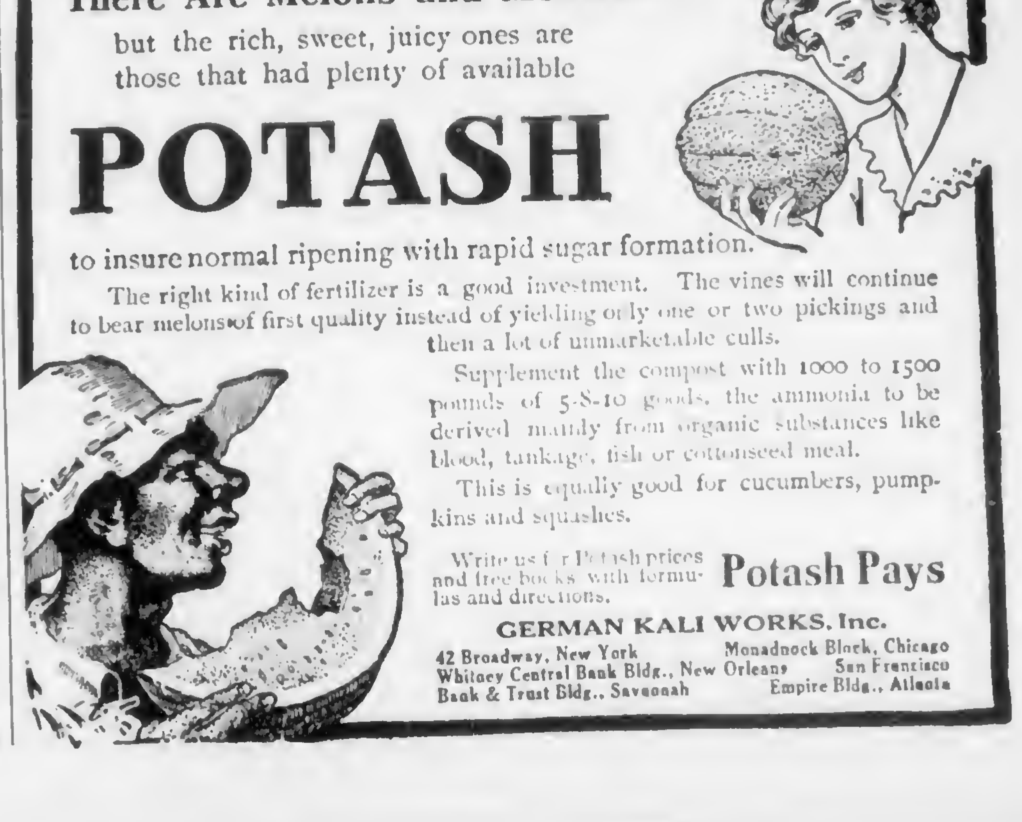

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SECRET SERVICE

By WM. GILLETTE and CYRUS TOWNSEND BRADY

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CHAPTER XVII (Concluded)

The two women looked at each other for a moment, both of them thinking the same thought, to which neither dared give utterance. The object of their thought was the boy, and the continuous flashes of light on the horizon seemed to make the situation more horrible.

''I am afraid they are going to have a bad time of it tonight,'' said Caroline, drawing the curtains and turning away from the window.

''I'm afraid so,'' was the rejoinder. ''Now, try to think, dear, who was at the telegraph office? Can't you tell me something that occurred that will explain Edith's silence? She looks like death, and——''

''I can't tell you anything, except that they arrested Mr. Arrelsford.''

''Mr. Arrelsford! You don't mean that?''

''Yes, I do,'' answered Caroline. ''General Randolph—I went and brought him there, because they wouldn't send my telegram—he was in a fearful temper——''

''But Edith? Can't you tell me what she did?''

''I can't Mrs. Varney, for I don't know. I waited for her in the hall, and when she came out she couldn't speak. Then we hurried home. I tried to get her to tell me, but she wouldn't say a word except that her heart was broken, and that's all I know, Mrs. Varney, truly, truly.''

''I believe you, my dear. I know you would tell me if you could.''

''I certainly would, for I love——''

There was a loud ring at the front door. It was evidently unlocked, for, without waiting for an answer, it was thrown open roughly, and thru the hall and into the drawing-room stalked Mr. Arrelsford. He was wildly excited, evidently in a tremendous hurry, and utterly oblivious to manners or anything else. He had been checked and thwarted so many times that he was in a bad temper for anything.

''Is your daughter in the house?'' he began roughly, without any further preliminaries or salutation, without even removing his hat.

Mrs. Varney drew herself up and looked at him. But he paid no attention to her at all.

''Answer,'' he said harshly.

She bowed her head in the affirmative, scarcely able to speak in her indignation at his manner and bearing.

''I wish to see her.''

''I don't believe she will receive you at present,'' returned her mother quietly.

''What she cares to do at present is of small consequence. I must see her at once. Shall I go up to her room with these men, or will you have her down here?''

The room had filled with soldiers as the two spoke together.

''Neither the one nor the other, sir,'' said Mrs. Varney, who was not in the least afraid of Mr. Arrelsford or his soldiers, ''until I know your business with her.''

''My business—a few questions—I've got a few questions to ask her. Listen to that noise out yonder! Do you hear those guns and the troops passing by? Now, you know what 'Attack tonight, Plan 3.' means.''

''Is that the attack?'' asked Mrs. Varney.

''That's the attack. They are breaking thru our lines at Cemetery Hill. That was the place indicated by 'Plan 3.' We are rushing to the front all the reserves we have, to the last man and boy, but they may not get there in time.''

''What, may I ask, has my daughter to do with it?''

''Do with it? She did it!'' asserted Arrelsford bitterly.

''What!'' exclaimed Mrs. Varney, in a great outburst of indignation. ''How dare you!''

''We had him in a trap, under arrest, the telegraph under guard, when she brought in that commission. We would have shot him in a moment, but they took me prisoner and let him go.''

''Impossible!'' whispered Mrs. Varney. ''You don't mean——''

''Yes, she did. She put the game in his hands. He got control of the wires and the despatch went thru. As soon as I could get to headquarters I explained, and they saw the trick. They rushed the guard back, but the scoundrel had got away. Foray was gone, too, and Allison knew nothing about it, but we're after him, and if she knows where he is,'' he turned as if to leave the room and ascend the stairs, ''I will get it out of her.''

''You don't suppose that my daughter would——'' began Mrs. Varney.

''I suppose everything.''

''I will not believe it,'' persisted the mother.

''We can't wait for what you believe,'' said Arrelsford roughly, this time taking a step toward the door.

Mrs. Varney caught him by the arm.

''Let me speak to her,'' she pleaded.

''No, I will see her myself.''

But Miss Mitford, who had been the indirect cause of so much trouble, once more interposed. She had listened to him with scarcely less surprise than that developing in Mrs. Varney's breast. She took a malicious joy in thwarting the Secret Service Agent. She barred the way, her slight figure in the door, with arms extended.

''Where is your order for this?'' she asked.

Arrelsford stared at her in surprise.

''Get out of my way,'' he said curtly; ''I have a word or two to say to you after I have been upstairs.''

''Show me your order,'' persisted the girl, who made not the slightest attempt to give way.

''It's Department business and I don't require an order.''

''You are mistaken about that,'' said Caroline with astonishing resourcefulness. ''This is a private house, it isn't the telegraph office or the Secret Service Department. If you want to go upstairs or see anybody against their will, you will have to bring an order. I don't know much, but I know enough for that.''

Arrelsford turned to Mrs. Varney.

''Am I to understand, madam,'' he began, ''that you refuse——''

But before Mrs. Varney could answer, the soldiers Arrelsford had brought with him gave way before the advent of a sergeant and another party of men. The Sergeant advanced directly to Mrs. Varney, touched his cap to her, and began:

''Are you the lady that lives here, ma'am?''

''Yes, I am Mrs. Varney.''

''I have an order from General Randolph's office to search this house for——''

''Just in time,'' said Arrelsford, stepping toward the Sergeant; ''I will go thru the house with you.''

''Can't go thru on this order,'' said the Sergeant shortly.

''You were sent here to——'' began Mrs. Varney.

''Yes; sorry to trouble you, ma'am, but we'll have to be quick about it. If we don't find him here we've got to follow him down Franklin Street; he's over this way somewhere.''

''Who are you? What do you want?''

''Man named Thorne, Captain of Artillery,'' answered the Sergeant; ''that's what he went by, at least. Here, two of you this way! That room in there and the back of the house. Two of you outside,'' pointing to the windows. ''Cut off those windows. The rest upstairs.''

The men rapidly dispersed, obeying the commands of the Sergeant, and began a thoro search of the house. Caroline Mitford preceded them up the stairs to Edith's room. Arrelsford, after a moment's hesitation, stepped toward the door and went out, followed by his men. Without a word of acknowledgment or even a bow to Mrs. Varney, he and his men presently left the house. As he did so, two of the Sergeant's men re-entered the room, shoving old Jonas roughly before them. The man's livery was torn and dirty, his head was bound up, and he showed signs of the rough handling he had undergone.

''Where did you get that?'' asked the Sergeant contemptuously.

''He was locked in a closet, sir.''

''What were you doing in there?'' He turned to the old negro. ''If you don't answer me, we will shoot the life out of you.'' He raised his revolver threateningly. ''Belongs to you, I reckon,'' he said to Mrs. Varney.

''Yes, my butler; they locked him up. Mr. Arrelsford wants him for carrying a message.''

''That's all right,'' said the Sergeant. ''If he wants him, he can have him. We're looking for someone else. Put him back in his closet. Here, this room! Be quick now! Cover that door. Sorry to disturb you, ma'am.''

''Do what you please,'' said Mrs. Varney; ''I have nothing on earth to conceal.''

As the men hurriedly withdrew to continue their search, the voice of a newcomer was heard on the porch. The words came to them clearly:

''Here, lend a hand, somebody, will you?''

The next moment General Varney's orderly entered the room, caught sight of the Sergeant, saluted, and then turned to Mrs. Varney.

''I've brought back your boy, ma'am,'' he said.

''Oh!'' exclaimed Mrs. Varney faintly; ''what do you mean——''

''We never got out to General Varney's. We ran into a Yankee raiding party, cavalry, down here about three miles. Our home guard was galloping by on the run to head them off, and before I knew what he was about, the boy was in with 'em, riding like mad. There was a bit of a skirmish, and he got a clip across the neck. Nothing at all, ma'am. He rode back all the way, and——''

''Oh, my boy! He's hurt—he's hurt——''

''Nothing serious, ma'am; don't upset yourself,'' returned the orderly reassuringly.

''Where did you——''

But that moment the object of their solicitude himself appeared on the scene. The boy was very pale, and his neck was bandaged. Two of the Sergeant's men supported him.

''Oh, Wilfred!'' cried his mother; ''my boy!''

''It's nothing, mother,'' said Wilfred, motioning her away. ''You don't understand.'' The boy tried to free himself from the men who still held him by the arm. ''What do you want to hold me like that for?'' he expostulated, as he drew himself away and took a few steps. ''You see I can walk,'' he protested.

His words were brave, but his performance was weak. His mother came close to him and extended her arms toward him. But Wilfred was a soldier now, and he did not want any scenes. Therefore, with a great effort, he took her hand in as casual a manner as possible, quite like a stranger paying an afternoon call.

''How do you do, mother?'' he said. ''You didn't expect me back so soon, did you? I will tell you how it was. Don't you go away, orderly. I will just rest a minute, and then I will go back with you.'' Another outburst of the cannon and the frantic pealing of the alarm bells caught his attention. ''See, they are ringing the bells calling out the reserves,'' he started toward the door. ''I will go right now.''

''No, no, Wilfred,'' said his mother, taking his arm; ''not now, my son.''

''Not now?'' said Wilfred, whose weakness was growing apparent. ''Do you hear those—those—those bells and—then tell me not—to go—why——''

He swayed and tottered.

''Stand by there!'' cried the Sergeant.

The two men immediately caught hold of him as he fainted. They carried him to the lounge.

''Find some water, will you?'' continued the Sergeant. ''Put his head down, ma'am, and he'll be all right in a minute. He's only fainted.''

One of the privates who had hurried off in search of water soon came back with a basin full, with which Mrs. Varney laved the boy's head.

''He'll be all right in a minute,'' said the Sergeant. ''Come, men.''

He turned as he spoke, and, followed by the men, left the room, leaving Mrs. Varney with Wilfred and the orderly. It was the latter who broke the silence.

''If there isn't anything else, ma'am, I believe I'd better report back to the General.''

''Yes,'' said Mrs. Varney, ''don't wait. The wound is dressed, isn't it?''

''Yes; I took him to the Winder Hospital. They said he would be on his feet in a day or two, but he wants to be kept pretty quiet.''

''Tell the General how it happened.''

''Very well, ma'am,'' said the orderly, touching his cap and going out.

The next person to enter the room was Caroline Mitford. The noise of the men searching the house was very plain. Having informed Edith of the tumult, she had come downstairs to enquire if they had found Thorne. She came slowly within the door—rather listlessly, in fact. The exciting events of the night in which she had taken part had somewhat sapped her natural vivacity, but she was shocked into instant action when she saw Wilfred stretched upon the sofa.

''Oh!'' she breathed in a low, tense whisper; ''what is it? Is he——''

''Caroline dear,'' said Mrs. Varney, ''it is nothing serious. He isn't badly hurt. He was cut in the neck and fainted. There, there,''—the woman rose from Wilfred's side and caught the girl,—''don't you faint, too, dear.''

''I am not going to faint,'' said Caroline desperately. She took Mrs. Varney's handkerchief from the latter's hand, and dipped it in the water. ''I can take care of him,'' she continued, kneeling down by her boyish lover. ''I don't need anybody down here at all. The men are going all over the house and——''

''But, Caroline——'' began Mrs. Varney.

''Mrs. Varney,'' returned the girl, strangely quiet, ''there's a heap of soldiers upstairs, looking in all the rooms. I reckon you had better go and attend to them. They will be in Edith's room, or Howard's, in a minute.''

''Yes, yes,'' said Mrs. Varney, ''and Howard so ill. I must go for a few minutes, anyway. You know what to do?''

''Oh, yes,'' answered the girl confidently.

''Bathe his forehead. He isn't badly hurt, dear. I won't be long, and he will soon come to, I am sure,'' said Mrs. Varney, hastening away.

Presently Wilfred opened his eyes. He stared about him unmeaningly and uncomprehendingly for the moment.

''Wilfred, dear Wilfred,'' began the girl in soft, low, caressing tones, ''you are not hurt much, are you? Oh, not much! There, you will feel better in just a moment, dear Wilfred.''

''Is there—are you——?'' questioned Wilfred, striving to concentrate his mind on the problem of his whereabouts and her presence.

''Oh, Wilfred, don't you know me?''

''What are you talking about?'' said Wilfred more strongly. ''Of course, I know you. Where am I?'' And as full consciousness came back to him, ''What am I doing, anyway? Taking a bath?''

''No, no, Wilfred; you see I am bathing your head. You fainted a little, and——''

''Fainted!'' exclaimed Wilfred in deep disgust. ''I fainted!'' He made a feeble attempt to rise, but sank back weakly. ''Yes, of course, I was in a fight with the Yankees and got wounded somewhere.''

He stopped, puzzled, staring strangely, almost afraid, at Caroline.

''What is it?'' asked the girl.

''See here,'' he began seriously; ''I will tell you one thing right now. I am not going to load you up with a cripple, not much.''

His resignation was wonderful.

''Cripple!'' exclaimed Caroline, bewildered.

''I reckon I've got an arm knocked off, haven't I?''

''No, you haven't Wilfred; they are both on all right.''

''Perhaps it was a hand that they shot away?''

''Not a single one,'' said Caroline.

''Are my—my ears on all right?''

''Yes,'' answered the girl. ''You needn't bother about them for a moment.''

Wilfred staked all on the last question.

''How many legs have I got left?''

''All of them,'' answered Caroline; ''every one.''

''Then, if there's enough of me left to—to amount to anything—you'll take charge of it, just the same? How about that?''

''That's all right,'' said the girl, burying her face on his shoulder.

Wilfred got hold of her hand and kissed it passionately. He seemed quite strong enough for that.

''I tried to send you a telegram but they wouldn't let me,'' whispered Caroline suddenly, raising her head and looking at him.

''You did?''

''Yes.''

''What did you say in it?''

But here the girl's courage failed her.

''Tell me what you said,'' persisted Wilfred.

''It was something very nice,'' faltered poor Caroline.

''It was, eh?''

''Yes.''

''Was it as nice as this?'' asked Wilfred, suddenly lifting his head and kissing her.

''I don't know about that,'' stammered Caroline, blushing a beautiful crimson, ''but it was very nice. I wouldn't have tried to telegraph it if it was something bad, would I?''

''Well, if it was so good,'' said Wilfred, ''why on earth didn't you send it?''

''Goodness gracious!'' exclaimed Caroline; ''how could I when they wouldn't let me?''

''Wouldn't let you?''

''I should think not. They had a dreadful time at the telegraph office.''

''At the telegraph office; were you there?'' Wilfred made a violent effort to recollect. ''I have it,'' he said in stronger tones; ''they told me at the hospital. I must get up.''

''No, no; you mustn't,'' said Caroline, interposing.

''Don't,'' said Wilfred; ''I have to attend to it.'' He spoke with a stern, strange decision, entirely foreign to his previous idle love-making. ''I know all about Thorne. He gets hold of our Department Telegraph and sends out a false order, weakens our defences at Cemetery Hill.'' The boy got to his feet by this time, steadying himself by Caroline's shoulder. ''They are down on us in a moment.'' A look of pain, not physical, shot across his face, but he mastered it. ''And she gave it to him, the commission; my sister Edith!'' he continued bitterly.

''Oh!'' said Caroline; ''you know——''

''I know this. If my father were here, he'd see her. As he isn't here, I will attend to it. Send her to me.''

He spoke weakly, but in a clear voice and a most imperative manner. He took his hand off Caroline's shoulder. If he were to deal with this, so grave and critical a situation, he must do it without feminine support. By a great effort he held himself resolutely erect, repeating his command.

''Send her to me.''

''No,'' said Caroline faintly, just as Mrs. Varney re-entered the room.

''What is it?'' asked the mother.

''He wants to see Edith,'' returned the girl.

''Not now, Wilfred,'' persisted Mrs. Varney; ''you are weak and ill, and Edith——''

''Tell her to come here, I must see her at once,'' repeated Wilfred.

Mrs. Varney instantly divined the reason. Caroline had told him about the telegraph office, but she could see no advantage to be gained by the interview he sought.

''It won't do you any good, Wilfred,'' she said. ''She won't speak a word to anybody about it.''

''I don't want her to speak to me,'' returned the boy grimly; ''I am going to speak to her.''

''But some other time, Wilfred,'' urged his mother.

''No, no; immediately,'' but as no one made the slightest effort toward complying with his demand, ''very well,'' he continued, moving slowly toward the door, and by a determined effort keeping his feet. ''If you won't send her to me, I will——''

''There, there,'' said Mrs. Varney, interposing swiftly; ''if you must, you must. Since you insist, I will call her.''

''I do insist.''

''Stay with him, dear,'' said Mrs. Varney to Caroline, ''and I will go and call her.''

''No,'' said Wilfred, ''I want to see her alone.''

Wondering much at this move of her boy lover, but somehow feeling that Wilfred represented his father and the law, Caroline, after one long look at his pale but composed face, turned and followed Mrs. Varney out of the room.

CHAPTER XVIII

Captain Thorne Justifies Himself

After the two women had left him, Wilfred stood motionless for a moment, and then sat wearily down to rest. Scarcely had he done so when he heard shouts far outside in the street, the heavy trampling of feet, cries, directions, orders. He rose and walked over to the window. The cries were growing louder and the footsteps more distinct. Men were approaching the house rapidly; he could tell that they were running. What could they be? What was toward? A suspicion flashed into his mind. It had hardly found lodgment there when Thorne sprang upon the porch, leaped across it, and burst thru the other front window into the long room. A pedestal with a bust of Washington on it was standing between the windows. As Thorne sprang back from the window, he knocked against it. It fell to the floor with a tremendous crash.

He stood staring for a moment toward the window, listening while the noise of the running feet died away in the distance. It seemed that he had distanced his pursuers or eluded them for the time being. It could only be for a moment, however; he had other things to think of. Well, that moment would be enough; it was all he required. He turned to go down the room, only to find himself confronted by the boy.

It is hard to say which was the more surprised of the two—Thorne at seeing Wilfred, or Wilfred at Thorne's appearance. The latter's face was pale, his breath was coming rapidly, he was bareheaded. His brow was covered with sweat, and he had the hunted, desperate look of a man at the very end of his resources. Neither at first said anything to the other. It was Thorne who first recovered himself. He sought to pass by the boy, but Wilfred seized him.

''Halt!'' he cried; ''you are under arrest.''

''Wait a moment!'' gasped Thorne; ''and I will go with you.''

As he spoke he shook himself loose from the weak grasp of the wounded young man, and started down the room.

''Halt, I say!'' cried Wilfred. ''You are my prisoner.''

''All right, all right,'' said Thorne quietly; ''your prisoner, anything you like. Here,''—he drew his revolver from his pocket and pushed it into the boy's hand; ''take this, shoot the life out of me, if you wish, but give me a chance to see my brother first.''

''Your brother?''

''Yes. He was shot here tonight. I want one look at his face; that's all.''

''Where is he?''

''Maybe they put him in the room across the hall yonder.''

''What would he be doing there?'' asked Wilfred, not yet apprehending the situation from Thorne's remarks.

''Nothing,'' said the other bitterly; ''I guess he is dead.''

''Wait,'' said Wilfred. He stepped across the hall, keeping Thorne covered with his revolver. ''Don't move; I will see.'' He threw open the door, glanced in, and then came back. ''It's a lie!'' he said.

''What!'' exclaimed Thorne.

''There is no one in there. It is just one of your tricks. Call the guard!'' He shouted toward the hall, and then toward the window. ''Sergeant of the Guard! Captain Thorne is here, in this house.''

He stepped out on the porch and shouted again with astonishing power for one so painfully wounded as he. Then the boy felt a faintness come over him. He sank down on a seat on the porch and leaned his head against the side of the house, and sought to recover his strength, fighting a desperate battle: fearful lest Thorne should escape while he was thus helpless.

It was Edith Varney who first replied to his frantic summons by hurrying into the room. She was as much surprised to see Thorne as he was to see her. Her heart leaped in her bosom at the sight of him, and she stared at him as at a wraith or a vision.

''You wouldn't tell me an untruth, would you?'' said Thorne, coming closer to her. ''He was shot in this room an hour ago, my brother Henry. I'd like to take one look at his dead face before they send me the same way. Where is he? Can't you tell me that much, Miss Varney? Is he in the house?''

Edith looked at his face, shook her head a little, and moved away from him toward the table. Thorne threw up his hands in a gesture or despair, and turned toward the window. As he did so, Wilfred, having recovered from his faintness a little, called out again:

''The guard! The escaped prisoner. Captain Thorne!''

This time his frantic outcry was answered. At last they were closing in upon the wretched man. He turned from the window and faced the girl, scarcely less wretched than he, and laughed shortly.

(To be continued.)

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Household

TRAINING THE BABY

Evelyn Harris

We all love nice babies, and we try to make ours just a little bit better than the other babies we see. But I wonder how many wives stop to think of prenatal influences and the effect of staying at home all the time we are waiting for the new one to come. Personally, I try to live my life the same way and visit as much as ever. I always have a neat looking, dark dress, made in one piece and with a high waist line. We must be our busiest and happiest at this time, for we are making or maring our child's disposition at this time. It is hard work and we almost give up in despair, but reason it out and soon we can get into a cheerful frame of mind.

A short drive to the postoffice or just a walk to the next farm will often put us all right, so I try to go out often. All the time, subconsciously, we are thinking of the child and hoping for good things from it. When baby arrives, one of the first things I try to instill into his little brain is that other folks live in the same house with him. Too often we find "King Baby," and everyone must bow to him. While he is young, things like this seem cute, but as he grows older he will expect the same kind of treatment, and is apt to become very selfish and domineering. So practice a regular routine from the very first, and try to follow it out. Put him down into his bed for his naps. Do not spoil him in the first month by rocking him. So many folks rock, and that is not good for the baby.

AFTER A GOOD NAP.

A few weeks ago, while paying a visit to my mother-in-law, the baby awoke very hungry while we were eating dinner. I carried him and his bottle out to the girl in the kitchen. I heard her rocking very hard, but as the baby was quiet I said nothing. When she brought him to me she gave me the bottle of milk, which he had not taken, and there were small lumps of butter floating on top. The milk had been brought in at 7.30 A. M., and this was 1.30 P. M. It was perfectly fresh, but with the right temperature and violent rocking, it had been churned. So I said: "Georgia, I am glad the milk is in the bottle and not in the baby, for I do not think he is old enough for buttermilk yet." That proved to me that rocking was not good, especially on a full stomach. I have not patience enough to rock, but I personally know a woman who used to hold one child in her lap and put the baby in the cradle and rock both for one and a half or two hours, and then they would sleep alone for half an hour without rocking! But such a useless waste of time!

When they are old enough to talk and walk, I still insist on a regular hour for naps and for going to bed. I simply undress them, hear their prayers, tuck them in, turn down the light and come out of the room. They are left in perfect quiet and soon go to sleep without any fuss. When they are very young, I always use a thin "Teddy-bear" blanket to wrap them in, and when I take them into bed with me to nurse, I take blanket, too, so that there will be no sudden shock of a cold bed when they go back again. I keep one for day and one for night use, and as they are only cotton, they are very easy to wash.

SPRING SAUCES

By Hilda Richmond

Brown Sauce.—When frying beefsteak add one-half pint of water to the drippings and cook until every crumb is loose. Then add one scant tablespoon of flour, made smooth in cold water, and cook until like thick gravy. One minute before taking from the fire add one cup of horseradish, grated and made wet with mild vinegar. Stir well and serve with the beef.

Brown Pork Sauce.—Proceed as above, after frying ham or fresh pork, but if there is very much fat in the pan, pour part of it off before adding the thickening and horseradish.

Tomato Sauce.—Press one can of tomatoes thru a colander and add to it two finely minced onions, one stalk of celery, cut fine and a clove of garlic. Simmer all morning on the back of the stove but do not boil. Serve with fish or beef. Season with salt and red pepper.

Cream Gravy.—When frying ham, pour off most of the fat and add one cup of thin sweet cream. Shake well and serve with the meat.

Onion Sauce.—Chop or cut fine six medium-sized onions. Put in a granite pan, without flaws, along with one tablespoon of butter and salt and pepper to taste. Cook very slowly until the onions are a golden brown. Serve with steak or fresh fried pork.

Crumb Sauce.—When frying fresh pork or ham, pour off part of the fat. To the remainder add one cup of bread crumbs and brown nicely. Have ready a dish of hominy, noodles or rice, and spread the brown sauce evenly over the top. In serving, give each person a little of the sauce with the other food, or serve in a separate dish.

Pepper Sauce.—Cook together one pint of tomato, one cup of chopped onion, one stalk of celery and two dried red peppers until thick and fine. Add a little water if it gets too thick. Season and serve with pork.

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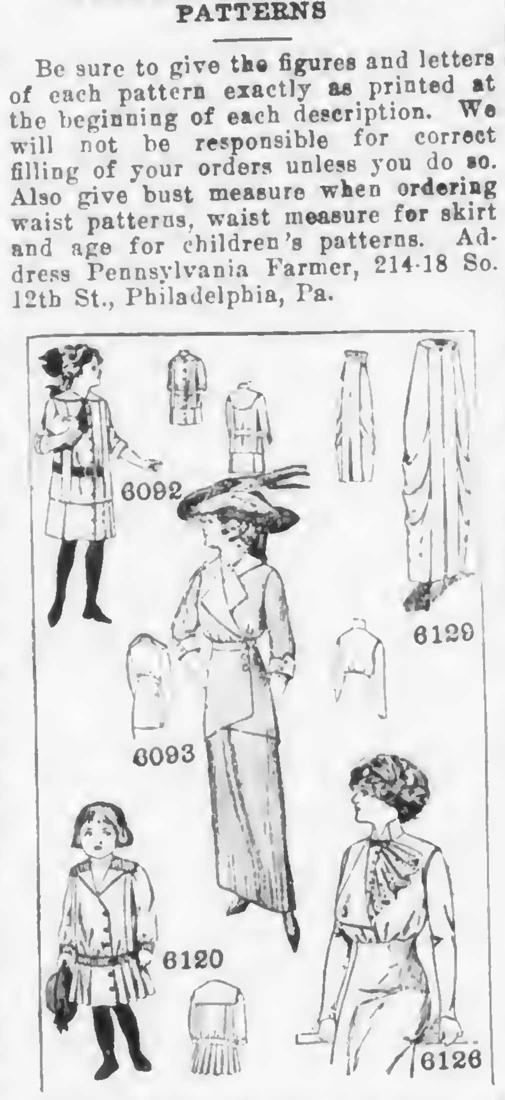

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IT PAYS You to mention Pennsylvania Farmer when you are writing to our advertisers.

Veterinary

(Conducted by W. C. Fair, V. S.)

(Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full, also name and address of writer. Initials only will be published. When reply by mail is requested, it becomes private practice, and a fee of $1 must accompany the letter. This is one of the most valuable columns of the paper and we invite readers to make use of it. Clippings from this column, when properly preserved and classified, would make one of the most valuable medical symposiums a farmer-stockman could obtain.)

Conjunctivitis.—My 10-year-old mare is healthy and in fair flesh, but has a watery discharge from eyes. Our local veterinary has treated her for some time, but fails to relieve her of this trouble. What can you suggest as remedy that I can apply myself? C. E. R., Green Castle, Pa.—Dissolve 40 grains borate soda and 40 grains boracic acid in 4 oz. of clean water that has been boiled and apply to eyes, 3 times a day. Occasionally blow a little calomel into eyes, not oftener than 3 times a week.

Acidity of Stomach.—I have a cow that is inclined to eat her bedding, sticks or anything she can get hold of. I bed her with leaves. She has never done this before. B. I. O., Oil City, Pa.—You had better bed your cow with shavings or sawdust; leaves are usually infected and more apt to sicken your cow than other roughage. Give her 1 oz. ground gentian, 1 oz. cooking soda, 1 oz. powdered charcoal, and 1 oz. sal soda at a dose in feed, 2 or 3 times a day.

Elbow Abscess.—My 2-year-old filly, which we are breaking, has either a shoe boil or capped elbow. What can I apply to remove this enlargement? B. M. H., Euclid, Pa.—Elbow bunches are generally caused by bruise of some kind. Foment with hot water or apply cold water. Dissolve ¼ lb. acetate of lead in 1 gal. of water, adding ½ pt. tincture arnica and apply to elbow, 4 or 5 times a day.

Shoats Cough.—I have some 2-months-old pigs that are inclined to cough. Are they too young to give drugs to? What do you think is the probable cause? D. W. S., Sandy Lake, Pa.—They perhaps take cold and their ailment is catarrhal. Give them some ground or powdered licorice and salt in their feed. They should get well without treatment, if weather conditions are favorable.

Pin Worms.—What is the best remedy for pin worms? I have a 6-year-old mare that is troubled with them. I have tried various home remedies without helping her. I read the veterinary column of this paper and derive much benefit from it, but fail to find anything to hit my case. T. W. R., Harmony, Pa.—Mix 1 part coal-tar disinfectant and 30 parts water together thoroly and inject mare, 3 times a week. She should be fed on laxative food.

Laminitis.—My horse is very stiff and sore in fore feet. I would like to know what ails him. He eats oats daily, also gets same exercise. B. W. E., Durand, Pa.—Stand him in wet clay several hours a day and give 2 dr. salicylate of soda, 2 dr. nitrate potash and 2 or 3 drs. powdered licorice at a dose in feed, twice a day. He should be fed some roots and be salted well.

Orphan Colts.—I would like a little information regarding the care and management of a young colt which we shall have to raise on cow's milk. M. H., Cory, Pa.—Select a healthy cow that recently freshened and add a little sugar, also one-quarter water to her milk before feeding it to colt. Young colts should be fed every 2 or 3 hours up to bed time, then the first thing in the morning.

Corns.—I recently purchased a mare that was used for driving on stone road. She has corns on both fore feet. What can I apply to remove them? S. J. A., Meadville, Pa.—Discontinue driving her on hard roads; her place is on farm, walking on soft ground. Remove pressure off corn and avoid keeping heels too high. A bar shoe with wide web is good, relieving inside quarter of pressure. Be sure not to cut away too much of sole of foot; also stand her in wet clay an hour or two every day.

COUNTY NOTES

Clarion Co., Pa. (W. C.), Feb. 12.—Cold at present, but mostly wet the past month. Live stock in good condition and scarce on account of big supply of roughage. Wheat looks promising. Clover does not look so good, as the frost has pulled it out of ground. Eggs, 22c; butter, 23c.—H. F. Niederriter.

Bedford Co., Pa. (S. C.), Feb. 11.—Very cold, but very little snow. Live stock scarce and high. Hay, $13.00 ton; corn, 65c; wheat, 95c. Apple market is improving; fancy grades, $3.50@3.75 bbl, and indications still better. Indications good, so far, for fruit the coming season. Quite a lot of plowing done, due to open winter.—N. F. Richards.

Greene Co., Pa. (S. W.), Feb. 13.—Fine winter weather; not much snow. Live stock scarce. Winter wheat looking good. Wheat, $1.10 bu.; oats, 40c; corn, 60c; eggs, 25c doz.; butter, 30c lb.; chickens, 12@14c. Some plowing done during the last of January. Stock doing fine.—C. E. Addleman.

Lycoming Co., Pa. (N. C.), Feb. 12.—Cold with very little snow; no sleighing. All live stock looking well; feed holding out well, owing to extremely mild weather thru January. Good demand for dairy cows. Milk brings 16@18c per gal., wholesale. Farmers hauling away corn at 60c per bu. Beef cattle bought up close. Team and day laborers in great demand now, owing to ice harvest, which is now on with good crop and favorable weather. Wages good. Everybody too busy to be dissatisfied.—Clyde E. Hall.

Northampton Co., Pa. (E. C.), Feb. 17.—Weather cold. Plenty demand for cattle. Veal, 9c, alive. Young chicks in demand by up-to-date farmers. Ice houses now being filled; sledding a failure.—R. J. Speer.

Washington Co., Pa. (S. W.), Feb. 15.—Fair and cold; very little snow so far this winter. Beef cattle very scarce, 8@8½c; dressed, 11@12c; butter, 35@38c; eggs, 30@32c. Farm stock in good condition; have not suffered from cold, as the winter has been mild. No ice crop so far.—R. M. Day.

Potter Co., Pa. (N. C.), Feb. 10.—Nice weather; no sleighing. Both dairy and beef cattle are scarce; also hogs. Chickens, 10c, live wt.; potatoes, 50c; apples, 50c bu.; butter, 35c; eggs, 25c; hay, $15 ton; straw, $8@10 ton. Some farmers are busy hauling their produce to market.—Louis J. Zundel.

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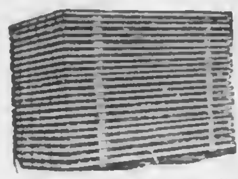

Yes, we mean smashed. Absolutely busted to pieces. That's our policy. We quote prices on lumber that will positively save you big money. If you will send your lumber bill we will send you a freight paid estimate that will mean a saving to you of from 30% to 50%. Every stick is absolutely first class, brand new and fully up-to-grade such as you would buy from any reputable house in the United States.

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New galvanized, heavy weight barb wire, put up on reels about 100 lbs. to the reel. Lot 2-AD-28 per 100 lbs. **$1.05.** Galvanized barb wire, light weight, first grade, best made, put up exactly 80 rods to reel, 2-point barbs. Lot 2-AD-28, per reel, **$1.40.**

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10,000 kegs, put up 100 lbs. to the keg mixed, all kinds together, regular nails, such as made by nail factories. Lot 2-AD-33, price per keg, **$1.50.** 1,000 kegs of 10 pennyweight regular new wire nails, 100 lbs. to the keg, while they last, per keg, **$1.85.** Write for our free Wire and Fence Catalog. Gives valuable information to any land owner. Fill in the coupon below.

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It is suitable for fences, stay wires, grape vines or for any ordinary purpose where wire is used. This galvanized wire is irregular in length—it ranges anywhere from 50 to 250 ft. $1.25 is our price for No. 6 gauge. Other sizes in proportion.

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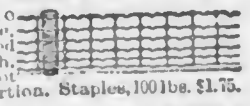

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WE SELL PRACTICALLY EVERYTHING

Our stock includes practically "everything under the sun". It's in truth, from a needle to a locomotive. No matter what your vocation, or what position in life you occupy, or what your business, or how great a merchant you are, you have use for us, and we have the goods that you can buy from us to a decided advantage. The quicker you learn to recognize this fact, the sooner you will be "putting money in your pocket".

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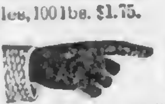

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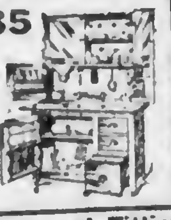

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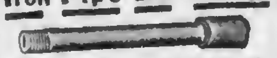

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ESTABLISHED 1880
PUBLISHED WEEKLY
VOL. 33.—No. 11. PHILADELPHIA, PA., SATURDAY, MARCH 15, 1913. 50 CENTS A YEAR.

Headle Dr. T. J.
Rutgers College

Country Cured Ham and Bacon

—By Prof. W. H. TOMHAVE,
State College, Penna.

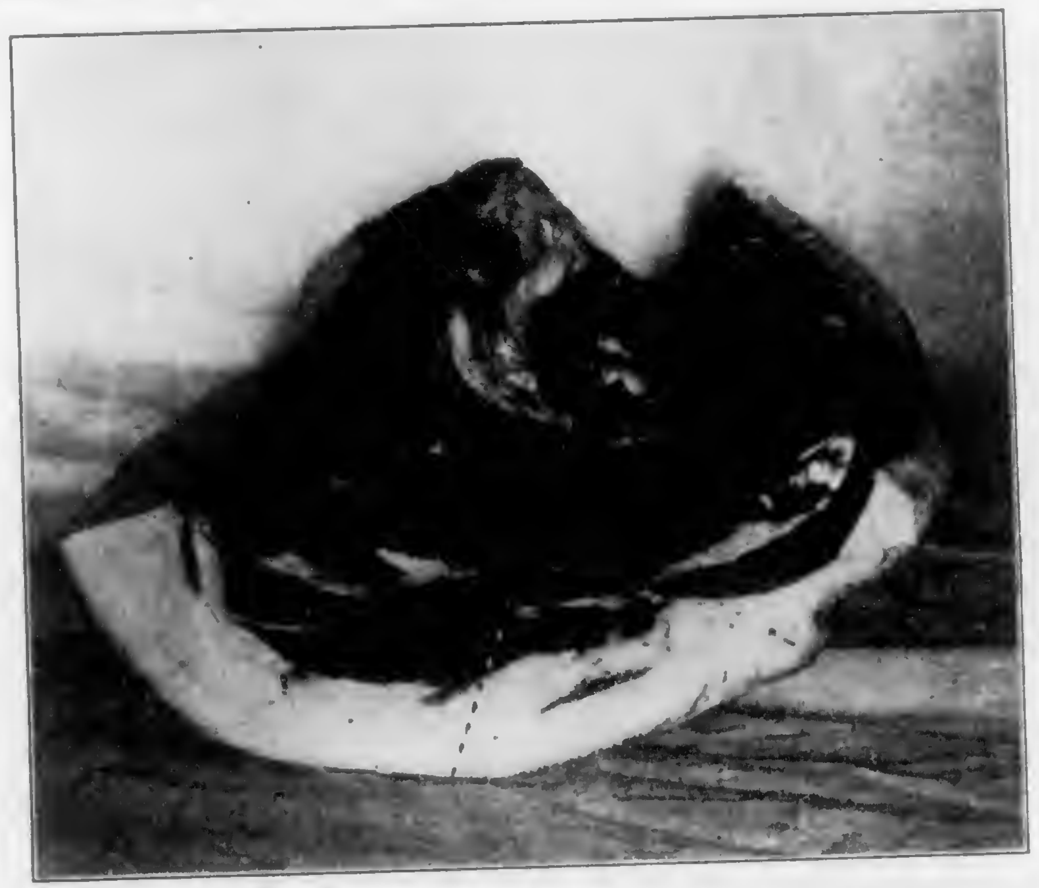
No hams or bacon ever taste just like those we used to cure on the farm. Country-cured hams and bacon are always in demand, if they are properly prepared and handled. There seems to be something in the flavor of these which is lacking in the cured pork sold on the open market. Is it due to the way in which it is cured or is it only an imagination?

To get the best results in curing pork, the hogs that are to be slaughtered must be properly fattened and handled with care just prior to killing. An immense number of hams and bacon are lost annually on the farms in the United States thru souring, because the live hogs are carelessly handled at the time of slaughtering. Hogs should never be overheated or excited before they are killed. It raises the body temperature from one to four degrees, and this makes it difficult to get the carcass properly cooled. These two or three degrees of abnormal heat result in a feverish condition, which often sours the hams or shoulders in less than 24 hours, and they can not be saved by curing.

A man once asked me to cure some pork for him, as he did not have the proper facilities for taking care of it. When a few days later he brought the meat he said: "I had to chase this hog all over the farm, but it did not take me long to kill him after he was caught." I remarked at the time that he would probably have some sour meat when it came out of the brine. Seven [illegible] later, after the meat had been cured and smoked, we found that both hams and shoulders were sour and completely unfit for food. This meant a loss of from $10 to $15 to this man, just because of carelessness in handling the live hogs.

Hogs, like all other animals, should be kept off feed at least 24 hours just before slaughtering, but should be given all the water they will drink. The reason for keeping the animals off feed is that unless the stomach and intestines are empty the blood would be filled with food contents which, in bleeding, can not be properly drained from the small capillaries of the body.

Many people seem to be of the opinion that it is necessary to cut the pork and prepare it for the curing vessel while the carcass is still warm. This is not true, and it is much better to have the carcass well cooled and the meat firmly set before it is cut. One of the principal aims in cutting the meat preparatory to curing is to trim all pieces as smooth as possible, so as to avoid waste. All the square corners and ragged edges, if left on the hams and shoulders and put thru the curing and smoking process, become hard and dry and must be wasted. These parts can be used, while fresh, to much better advantage if made into sausage and the fat portions tried out for lard.



LOIN AND BACON STRIP SEPARATED AS INDICATED BY DOTTED LINE.

Cutting Up the Carcass.—When cutting a pork carcass, the operator should have a definite aim in view. He should separate the thin or cheaper cuts from the thick and more expensive ones. The pieces that seem best adapted for use as fresh meat should be kept out and not permitted to go into the curing vessel. The heavy fat portions from the back and from parts of the hams and shoulders are much better used for lard. It is simply a waste of time and effort to try to make cured pork out of the fat that no one cares to eat. The American people are not great consumers of very fat pork, either fresh or cured. When it is converted into lard it is always acceptable in any home, and it is the one kind of pork product of which most housewives never have an over-supply.

A HAM, SHOULDER AND BACON STRIP READY FOR THE CURING VESSEL.

The carcass may be divided into halves while in a hanging position, but when that is done, the division should be made by splitting thru the center of the back bone and not on either side. Many people will insist on cutting on both sides, and in so doing ruin the loin, which is one of the choicest cuts of the whole carcass. The divided sides are best cut into four main divisions, namely, head, shoulders, middle and hams. This division is for convenience in cutting and handling.

The head is trimmed and cleaned to be used for head cheese and sausage meat. The shoulder is cut from the middle between the fourth and fifth ribs, counting from the front, or if a large amount of shoulder is desired, the cut may be made between the fifth and sixth ribs. If more loin is preferred, cut between the third and fourth ribs. The spare ribs are removed from the shoulders by cutting as close to the ribs as possible. The shoulders are then neatly trimmed and the shank removed, after which they are ready for the curing vessel. In case only a small amount of cured meat is desired, the top of the shoulders, or "Boston Butt," may be removed, cutting at about one-third distance from the top, parallel with the top line. The fat on the shoulder butt may be used for lard and the lean portions for steaks or roasts. This short cut shoulder is what is known as the "California Picnic Ham."

The hams are removed from the middle by cutting just at the rise in the back bone, about two inches in front of the pelvic bone. The hams are then neatly trimmed, with just enough fat left on the outside to cover as much of the lean as possible. After the shanks have been removed, the hams are ready to be cured and the trimmings used for sausage and lard. The middle is divided into loin and bacon strip. The loin is cut so as to remove in one piece the bundle of muscle fibre which lies along the back bone and the heavy layer of fat over the back. The fat is neatly trimmed from the loin and used for lard, while the loin is used for chops and roasts. The spare ribs are removed from the bacon side after

(Continued on page 13.)

SELECTION OF POTATO SEED.

By E. A. ROGERS, Cumberland Co., Me.

I am often asked whether or not it is desirable to plant small potatoes whole. To the grower who looks carefully to the source from which these small tubers come I would say yes, but to the ordinary grower who takes but little pains to inquire I would most emphatically say no.

In most potato fields one can find many hills very much weaker than others. These weak hills will produce just as many tubers in number as will the large, strong, vigorous ones, but the vigorous hills will grow nearly all tubers of a good market size, while the weak ones will usually have only one or two tubers at the most large enough for market. To bring this out more clearly, let us take six hills of each and compare results, taking for an average six tubers per hill. The most vigorous hills, or those which are most desirable seed producers, will not average over one potato in two hills small enough to plant whole, giving us three potatoes out of the six hills, or three potatoes out of 36. I am putting it high to say that the small, weak hills will produce one market tuber per hill; they will also average one tuber per hill too small to plant whole, thus leaving 24 about the size desired, as against three from the vigorous hills, or eight times as many. Anyone can readily see that by planting these small-size tubers, with no means of knowing what portion of them comes from weak hills, is to rapidly run down the yield, as a much larger portion of them will come from the weak plants.

These weak plants are money losers at all times, and to take them from the bin for three years in succession for planting is to insure a greater portion of the plants in the whole field becoming unprofitable. If one has carefully selected large or medium sized tubers for seed from which these small tubers were grown, they are all right to plant whole. Personally, when doing this I like them best for the very earliest planting, as there is little danger of their rotting in the soil after planting or of being burned by any reasonable amount of fertilizer that may be used. I have used as high as one ton per acre in the drill of the highest grade of fertilizer when planting, and had no trouble with missed hills. The best size tuber to plant whole is about that of a medium-sized hen's egg. If much larger ones are planted the one or two eyes on the seed end which start a week or 10 days ahead of those nearer the stem end, will not use all the plant food which the tuber contains, and later these eyes will send up small weak stalks, which produce tubers of no value and are really potato weeds. After a potato sprout gets a few inches high and gets a good root system it does not seem to feed any longer on the plant food there may be left in the seed tuber.

Were I located here in eastern Pennsylvania, New Jersey, Delaware or Maryland, and buying my seed tubers every year and selling my product as table stock, I never should want tubers for seed larger than large-size hen's eggs, provided I was sure these were grown from good-size seed tubers or, better still, hill selected stock. Practically all growers in the territory I have mentioned dig their crop early, and it makes a great difference to them whether or not their fields come up even; in fact, it may make the difference between a good profit and none at all.

As I have previously mentioned, the eyes on the seed end start first, and therefore small potatoes planted whole will give the most even stand of plants possible to obtain, provided the tubers have not previously been allowed to sprout and these been broken off. As a rule, whole seed sets a larger number in the hill, and unless the soil is rich and plenty of fertilizer used, there are apt to be too many under-size tubers to suit the grower, especially if he is growing for the early market. And, again, it takes about 20 bushels of whole tubers to plant an acre, even with rows three feet apart and dropped 15 inches apart in the rows. This is more seed than the grower can afford.

The next best method would be to take tubers of a little larger size and cut them in halves, always cutting lengthways, or thru the middle of the cluster of eyes on the seed end, leaving as near as possible half of these seed end eyes on each half. If they were cut crossways, the eyes on the stem end half starting, as they almost invariably do a week or 10 days later, will make the field as uneven as it would be if large tubers, weighing a pound each, were cut and planted: hence, if they were to be cut crossways, I should prefer the large tubers as crop producers.

It is far more important to the grower of early potatoes to have every hill come up at the same time than it is with those in the more northern states, where the crop has the whole season. The best size potato to cut in halves runs about 12 to 13 bushels of seed per acre. There is another advantage of planting small tubers whole. If wire worms are present in the soil, they seem to act as poison to the seed pieces, and they will far more readily attack the cut surface than they will thru the skin of the whole tuber.

Note.—The selection and handling of seed potatoes are fully discussed in the new book recently brought out by Mr. Rogers.—The Editors.

HORSE-POWER RATING

Horse power as applied to the machine world is the arbitrary measure of energy, just as the mile is the measure of distance. It does not necessarily express the exact amount of strength which any special horse is capable of exerting, tho it is supposed to represent about what the average horse can furnish under certain conditions. As machinery is becoming more and more a factor on the farm and as there are different kinds of horse-power energy in use, it is of considerable importance to know just what each means, both in relation to the horse and to each other.

Usually one horse power is considered the amount of energy that is required to raise 33,000 pounds one foot in one minute, the three elements of time, weight and distance all, of course, entering into the calculation. That is, 330 pounds lifted 100 feet within the minute require the same energy as 33,000 lifted one foot, the total work done being in each case measured by foot-pounds, which are obtained by multiplying the weight by the distance. This is the standard horse power of the machine world.

For different purposes, tho, some variation from this rule is necessary, and that creates different kinds of horse power; also it seems as tho some kind had been created more for the purpose of confusion in the rating of engines than for any other purpose. Unless the kind of horse power meant is carefully inquired into it is always possible to be very much deceived in the available working energy of a gasoline or of any other kind of engine.

Actual horse power is the measure of the energy actually developed as proved by a trial of the engine. It is measured by the foot-pound unit in accordance with the above rule.

Brake horse power is the amount of energy derived from the belt of the engine. It is usually determined by some form of friction-brake test, as the Prony brake. This is not absolutely accurate, but is sufficiently so for practical purposes. It is the form of horse power which is supposed to be meant in the rating of engines, and which should be insisted upon for purposes of comparison. It is also called effective horse power.

Indicated horse power is the measure of the energy developed in the cylinder. It is the form we obtain by figuring out our horse power by means of the various formulas which are based upon piston area, the usual method being to multiply the area of the piston head in inches by the length of stroke and the average effective pressure upon the piston during the stroke, then multiplying this by the number of strokes per minute and dividing by 33,000. This formula, of course, gives us the answer in exactly the terms of the definition for horse power; the distance traveled multiplied by the pounds lifted divided by 33,000, or the number of foot-pounds in a horse power. It differs from brake power, in that it includes all the power developed; that which is lost in overcoming the friction and in running the machinery of the engine itself, in addition to the working energy delivered at the belt.

Nominal horse power was also formerly based upon calculations from piston area, but has been given so many different meanings that it no longer represents anything definite, and is in use chiefly to confuse the purchaser as to the real working energy of his engine.

Tractive horse power is of considerable importance on the farm from the number of farm tractors now in use. It represents, not the energy developed in the cylinder, nor at the belt, but that which remains to apply at the draw-bar after the tractor itself has become self-propelling. The tractor which will furnish 60 percent of its brake rating in the form of traction energy is a good engine, tho at least one upon the market now claims an 80 percent tractive rating. The percentage is, of course, higher in large than in smaller engine, a 12 H. P engine doing well to develop 4 or 5 horse at the draw-bar, where a 25-horse power might deliver as much as 18.

In the purchase of a gasoline engine to fill a place where the exact required energy is known, as when it is to take the place of a steam engine, it is important to remember that, while the average steam engine may be crowded for a time considerably beyond its regular capacity, an internal combustion engine can not be. Usually the boiler of a steam plant has a greater capacity than the engine; that is, a 10-horse engine is usually linked up with at least a 11 or 12-horse boiler. With a full head of steam on and a hot fire under the grates and a good fireman tending the fire, the engine may be crowded for some time up to the full limit of its boiler capacity, providing nothing breaks down. The engine being overloaded on the strength of the reserve steam in the boiler, the reserve fire in the furnace, the reserve energy in the man. Sooner or later all of these will give out, but they may last for some time. The gasoline has no such reserve force. A 10-horse gasoline engine, truly rated, develops just as strong a 10-horse energy as a 10-horse steam engine; but its power is developed as it goes along; there is practically no reserve. The steam engine does 12-horse power work till the failing steam or fire drops it perhaps to 6 or 8. The 10-horse gasoline engine delivers 10 full honest horse power so long as that is all that is required of it; when the overload runs up beyond the limits of its reserve rating, it balks. Most gasoline engines are rated a little under what they may be made to do, but they have no reserve power beyond that.

A word, too, may be useful in the comparison of engine energy with the work of horses. A good average horse can, without injury to himself, draw 10 percent of his own weight as a regular working load. For a short time, in the press of emergency, he may increase this a great deal, still without injury, providing the exertion is not too long continued. Under the lash of a brutal driver, he may increase this energy to a surprising extent, and then perhaps drop dead the next minute. Under similar abuse the gasoline engine would probably turn sullen and retire from the job. It isn't that the engine does not give a full, honest horse power for each horse-power unit of its rated energy. The horse was hammered into giving a great deal more than actual horse power. Horse power in the animal with some men means whatever energy they can beat out of him; with the gasoline engine it means the number of horse-power units the engine was intended to produce. This can be increased a little by increasing the speed, but when the limit of the builder's intentions are reached the engine stops, and it does so without preliminary warning.—Xeno W. Putnam, Crawford Co., Pa.

IMPORTANCE OF RIGHT PLOWING

Am I making too strong a statement when I say that of all the work which comes to the farmer in the spring, none exceeds, or comes up to plowing in importance? I do not think so. Plowing is the very beginning of good crops. Fail there, and we fail everywhere. I have seen so many pieces of land absolutely spoiled for a good many years by improper plowing that I feel sure that there could be no more timely, no more interesting, no more profitable subject for us to consider than right methods in plowing. It is sometimes easier to fix a big truth in the mind if we begin by telling what not to be done about it. This is quite true in regard to plowing.

In some cases, it is actually better to let the plow stay in the barn than to apply it to the soil. One such instance would be where you can get a better seed bed, formed of richer surface soil without plowing than you could by pulling up a subsoil that never can be made very mellow or productive. But here we must depend upon the harrow to fit the surface soil. While the land is wet, better let is rest.

Right here we are face to face with a great temptation many times. We like to get out on the land as soon as we can and get to work. That is right, too, provided conditions are favorable. We don't like to see the neighbors getting the start of us. Think how the boys chafe when they look over the border fence and see the man on the adjoining farm turning the soil over, while we are sitting still, or doing the last stunts on the year's wood pile! They want to be "up and doing." Why not? Tom Jones is out plowing. His work will be a good ways ahead of ours. We ourselves feel something of the same longing to push out and get the plow started.

When we get in such a hurry, it will be a good thing for us to go out and look at that piece of land we plowed some time ago when it was too wet. The water ran deep in the furrow at the time. When we harrowed it, some parts were little more than a big mudhole. No grain of any consequence grew there, and today it is almost as hard as the road. The sun baked it. No seed could take root there. It will be years before that land will be back where it was. How much better it would have been to have possessed our souls in patience a few days longer and done the work when it should have been done and done it right!

Not so often do we see land plowed when it is too dry, but that is really done sometimes. When the dust flies on a field, better stand still and wait for a rain. Why? Because the plow is releasing elements from the soil which fly away and are lost, and perhaps our crop will be far lighter than it would have been if we had not been in too big a hurry. Not only that, should a hard rain come after a field has been plowed in the condition mentioned, it is very apt to be pounded down, and the surface actually coated over hard by the rain and the sunshine which follows.

How, then, shall our plowing be done? On our own farm, we do not care to have the soil plowed deep for corn. This work we do in the spring; and it is a good plan if several days are to elapse between plowing and planting, to run the roller over the land after the plow goes off, and do it as soon as you can. This keeps in moisture and fertility. For potatoes we want the plow point to go a good deal deeper. The point of this is that we can get a better seed bed. This work, too, we would like to be done in the spring.

Where the nature of the soil is such that fall plowing will cause it to pack and harden before spring, better wait before plowing old ground till nearly time to sow the grain crop. Some pieces of land are better anyway left till spring. It may delay seeding a little to follow this plan, but the results are enough more satisfactory to make up for the loss of time. As a matter of fact, grain sowed on many soils that have been plowed in the spring mature full as early, if not earlier, than those which have been gotten in on land plowed in the fall.

For grain crops like oats, we like to plow just as soon as we can in spring, if the soil is in good condition. Oats are not nearly as apt to rust if sowed early as when put in later. The best and heaviest oats we ever had were gotten in in the month of March. It has not been often that we could get them in as early as that, however.

Just a word, now, about plowing land that is inclined to "leach," as a good many fields are. By this, I mean that there are soils which are so porous that when it rains it carries down far into the earth a good deal of fertility. It is hard work to keep such a farm in a good state of fertility. Feed the soil well with manure this year and in a couple of years it has all disappeared, borne away down into the earth by the settling snows and the rains. Somehow we must get that back. The only way to do it that I know of is to set the plowshare deep. I know they tell us about dynamiting some soils, but is that practicable for the rank and file of farmers? Seems to me that has not yet been proven; but we do know that deep plowing does bring up fertility which has slipped away from us. More, it brings up a layer of soil that has not been exhausted by cultivation. Better still, it gives us earth which can be worked over and changed often from poor to good. This subsoil, when mixed with that lying above and treated with the right forms of fertility, adds to the value of our farms, and brings us better crops.

I would like to keep right on writing about this most fascinating subject, but space does not permit it. Just let me say that I consider a good plow and a good man back of it the very best rig a man can have on his farm.—E. L. Vincent, Broome Co., N. Y.

THE OATS CROP

Quite a bit of discussion has arisen in the past few years relative to the profit and advisability in sowing oats. Why do we sow oats? First, they fit into our general rotation as a crop to follow corn probably better than any other, except where the corn is harvested sufficiently early to allow wheat to be sown with success. Second, in the northern and central parts of the state they are used quite largely as a nurse crop for clover and grass. Third, oats, with a nutritive ratio of about 1.5, are very desirable to mix with our other home-grown grains, practically all of which have a wider ratio. Fourth, the straw is of considerable consequence as a roughage for horses during the winter season, as well as an absorbent in the stables. We might also mention the somewhat disproved belief that nothing is as good for horses as oats. How many oats must we grow on an acre to show a profit?

I think the following cost statement will apply to the state as a whole pretty closely:

Use of land	$5.00
Plowing	2.00
Harrowing (3 times)	1.20
Drilling	.50
Seed	1.50
Fertilizer	2.40
Total	$12.60

Allowing the straw to pay the cost of harvesting and threshing. Counting oats at 45 cents per bushel, it would require 28 bushel per acre to pay out. In regard to the cost items, one man and team is figured at 40 cents per hour. On land worth $100 per acre, $5 is a fair rent to charge. One dollar and a half is allowed for seed, and 2½ bushels per acre is usually sown, thus allowing 60 cents per bushel. The largest part of our seed is always saved from the previous year's crop, and this price allows for the purchase of some new seed from sections where oats give larger and heavier yields. By sowing an acre of two with this improved seed every few years, for seed purposes, we can maintain high quality and good yields.

Fertilizer is figured at $2.40, which will allow for the use of 200 pounds per acre of a 2 2/3-10½-4, if home mixing is followed, and we should practice it whenever we can save money by so doing. To give these percentages, use a mixture of 1,500 pounds acid phosphate, 160 pounds muriate of potash and 340 pounds of nitrate of soda, making in all one ton.

But in small quantities these will cost about as follows:

1,500 lbs. Acid Phos. @ $11 T.	$10.50
160 lbs. Mur. Pot. @ $2.40 cwt.	3.84
340 lbs. Nit. Soda @ $2.50 cwt.	8.84
Mixing, etc.	.82
Total	$24.00

Mixing should not cost over 30 cents per ton in any case, as one man will mix and resack a ton in two hours. If the land produced a rank growth of corn fodder of dark green color, omit the nitrate of soda. If clover and grass are seeded in the oats, use 300 pounds of fertilizer per acre and charge the extra 100 pounds to next year's hay crop.

Some may object to counting the value of straw as being equal to the cost of harvesting and threshing. Here in Indiana County we can hire our oats cut for $1 per acre, hired man furnishing horses, binder, binder twine and driver and boarding himself. Oats averaging 35 bushels per acre run at least 2/3 ton of straw per acre. For a 12 acre field the statement would be about as follows:

Cutting, 12 A. @ $1 per A.	$12.00
Shocking, 20 hrs. @ 15c per hr.	3.00
Hauling, 2 men and team, 12 hrs. @ 55c	6.60
Thresher's bill, 420 bu. @ 2c	8.40
Help at threshing	4.00
Total	$34.00

Thus we would have eight tons of straw in the mow for $34, or $4.25 per ton, and it certainly is worth it.

The oats crop is taken more as a matter of course, and less said about it than any other standard crop. We grow it on all kinds of soils, and it will thrive and make us dollars if we will study it closer and try to provide favorable conditions for it.—Indiana Countian.

Good Cabbage Seeds Increase Profits.

By C. E. MYERS, State College, Pa.

In the attempt to produce larger and better crops we should not lose sight of the fact that the individual plant is the result of two forces: environment, which has to do with climate, soil, fertilizer, culture and so on, and heredity, which has to do with the ancestry of the plant. Crop yields may be increased by improving the environment, and the practice is a necessary and important one in successful agriculture, but it can be accomplished only by more or less expense, and the results are not permanent. On the other hand, heredity is a silent force which acts without expense and its effects are generally lasting.

The importance of good seed is no where more pronounced than in the growing of truck crops which require intensive cultivation and the intrinsic value of which is generally high.

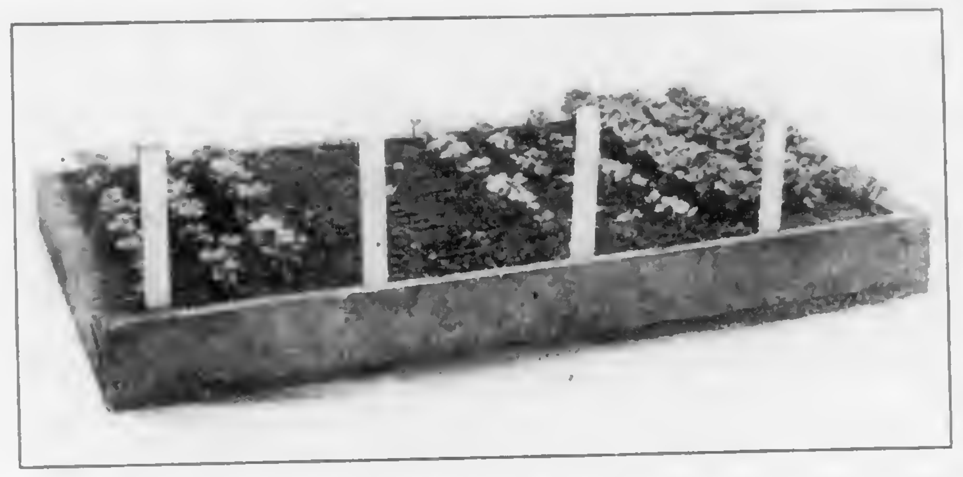


Fig. 1. A FLAT SHOWING VARIATION OF GERMINATION IN SEED FROM DIFFERENT SEEDSMEN.

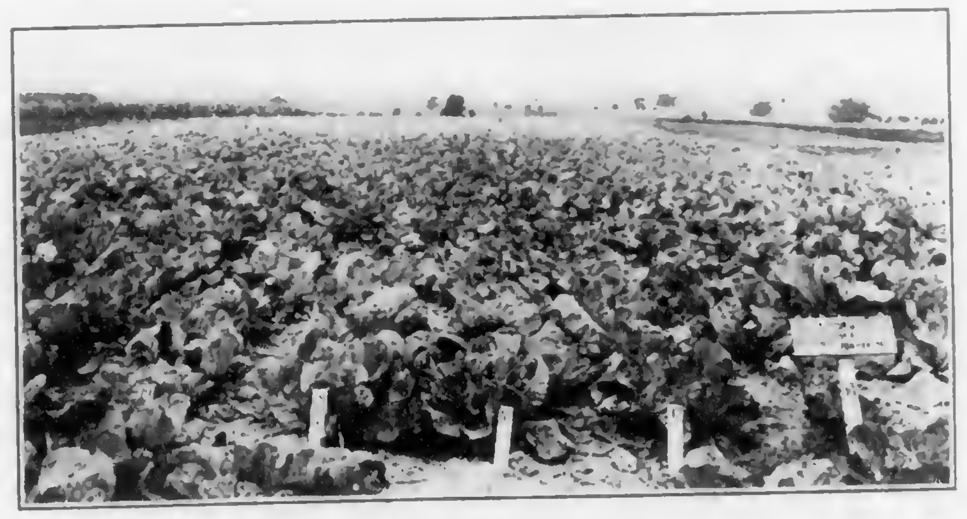


Fig 2. A DIFFERENCE IN TYPE.

There is a rather common practice among farmers and gardeners to purchase the seed for their plantings from one source. If the seed be of good quality, and satisfactory soil and other environmental conditions are afforded, the result is generally quite satisfactory. If, on the other hand, the crop is not satisfactory the cause may be attributed to an unfavorable season, lack of available plant food, insects or disease. The idea that the seed may be at fault is frequently overlooked. It is true that in the past a few farmers have appreciated the differences in strains of varieties of some of the more specialized crops, but the practice is not as general as it should be. We are accustomed to consider seed from a superficial standpoint only, and to disregard the fact that within the seed coat are enclosed all the potentialities of the future plant. We are accustomed to look upon human beings as having individualities, and frequently the character is attributed to some of the lower animals, but the idea of plants having an individuality would be considered by many as being preposterous.

For a number of years the Department of Horticulture of the Pennsylvania State College and Experiment Station has been making a careful study of the individuality of different strains of cabbage, or more definitely the relation that the character of the seed bears to the profitable production of this crop. The experiment was begun in the spring of 1908 by making a test of Jersey Wakefield cabbage, the seed of which was secured from 25 different seedsmen. The preliminary experiment showed so many interesting features that the following year the test was made to include several other varieties and was also more comprehensive.

One of the first facts of interest was that of variation in germination. Ordinarily, this subject should concern us but little, so long as a fair percentage of the seed germinates. Most of the strains were fairly satisfactory, yet in some instances the germination was very low. Fig. 1 shows the variation in germination of several strains of Jersey Wakefield cabbage seed purchased at the same time and sown under uniform conditions.

In the production of early cabbage, one of the chief items of importance, from the standpoint of the market gardener, is that if earliness. It is usually the early part of the crop which yields the best returns. Furthermore, if the crop matures within a relatively short time the land may be utilized for other purposes.

There was also a difference in the general character of the plants. In some instances they were true to type, uniform and desirable and possessed a distinct individuality which was characteristic of all of the plants in the strain, while another strain showed characteristics which were as fully pronounced and equally undesirable. Figs. 3 and 4 show strains, two of which are typical of the types cited.

It will be seen that the plants of row 17 are clean cut, true to type, uniform and desirable, while those of row 18 are rough, untrue to type, and worthless from a marketable standpoint. Most of them never matured as marketable heads and instead were only a rosette of leaves.

The experiments with the late varieties showed less important variations as regards trueness to type than was noted with the early varieties. However, important differences were observed as regards ability to resist disease and also in yield, as was seen from records of a test of Danish Ballhead.

From a study of the examples given it will be seen that cabbage possesses important individualities which are important from a commercial standpoint. The average variation for all of the strains tested is somewhat more than seven tons per acre. Were it possible, by the use of fertilizers or improved cultural methods to increase crop yields to this extent the result would be considered phenomenal.

An interesting fact shown by these tests was that no one seedsman's strain excelled in every particular variety. Some were generally good, and some had varieties the strains of which were good, and other varieties the strains of

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IRON AGE (Improved Robbins) Potato Planter

This machine soon pays for itself and yet puts real money into your pocket. One seed piece in every space and one only. Uniform spacing. No injury to seed. Ask your dealer to show it and write us for free booklet, *"100 per cent Potato Planting."* We make full line Potato machines, Garden tools, Sprayers, etc.

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Northern grown and of strongest vitality. We handle export grade only and can furnish grass mixture suitable for any soils.

SOY BEANS Wing's Mikado, Sable and Mongol are the heaviest known yielders. Are all our own new varieties obtainable from us only. Mikado has record of 37 bu. per acre. Will grow on poor soil and greatly improve it. Write today for catalog.

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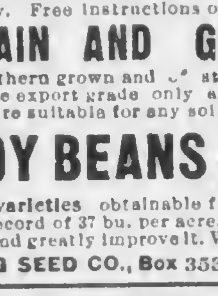
16 NEW BULBS FOR 20 CTS.



1 New Yellow Calla, very fine and valuable.
3 Emerald Vine, most graceful and elegant of vines.
3 Helianti, a most showy flower like Cosmos. Tubers make a fine winter vegetable cooked like asparagus.
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6 Shamrock Oxalis. Fine foliage; everblooming.

These 16 Bulbs are all new and extra fine. We mail them all together with a complete treatise on Culture of Summer Bulbs and big Catalogue for **20 cts.**

Our big **Catalogue** of Flower and Vegetable Seeds, Bulbs and rare new Fruits *free* to all who apply. We are the largest growers in the world of Gladiolus, Cannas, Dahlias, Lilies, etc., and our stocks are the best and cheapest.

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40 TREES, $4.00

40 Fruit Trees, well branched and rooted first-class. **Fresh Dug** and true to name for $4.00. Large stock of **Apple, Pear, Plum, Peach, Cherry** at wholesale prices. **GUARANTEED Ornamentals, Roses, Shrubs, Plants.** Send for **CATALOGUE** to-day

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Buy Trees Grown to Please—Large Stock Apple, Peach, Pear, Plum, Cherry, Quince Trees. Grape Vines, Berry Plants, Etc. Catalogue free. Freight prepaid. Special prices on early orders.

Salesmen Wanted. Outfit Free.

Mitchell's Nursery, Beverly, Ohio.

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All Standard Varieties. Also RASPBERRY, BLACKBERRY, CURRANT and GRAPE Plants and ASPARAGUS Roots in ASSORTMENT. WARRANTED TRUE-TO-NAME and of GRADE represented. Catalog with Cultural Instructions Free. C. E. WHITTEN, BOX 13, BRIDGMAN, MICHIGAN.

TREES AND PLANTS—All kinds—By the Millions—at wholesale price. Big supply Apple and Peach Trees. Privet Hedging. THE WESTMINSTER NURSERY, Westminster, Maryland

500,000 TREES, APPLE, PEACH, ETC.
200,000 Strawberry plants. Catalogue Free.
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Cabbage, Sweet Potato and other vegetable Plants. From $1 to $2 per 1,000. Cir. free. W. P. Drake, Dover, Del

Strawberry Plants Over thirty varieties at $2.50 per 1000. Descriptive Catalog Free. Basil Perry, B 25, Cool Spring, Dela.

Cabbage Plants, Frost Proof Early Jersey Wakefield and Charleston Wakefield. 25c. per 100; $1.50 per 1000. Basil Perry, B 25, Cool Spring, Del.

TIMOTHY Seed, choice 1912 grown, white corn, Bryan's Early Favorite Regenerated Swedish selected Oats. Cir. free. Dan Bryan, Portland, Ind.

SPORICIDE Sure Cure for **SMUT** in oats. Guar't'd. Simple to treat.
SPORICIDE CHEMICAL CO., ATLANTA, N. Y.

LIME-SULPHUR HYDROMETER Used By All Progressive Fruit Growers
Free By Mail With Test Jar and Instructions $1
Agents Wanted Everywhere
CARBONDALE INSTRUMENT CO., Carbondale, Pa

which were undesirable, while the varieties of a few seedsmen were generally below the average. The results show that in the past comparatively little attention has been paid to the matter of heredity. The irregularity has doubtless come about because of a lack of proper vigilance on the part of the seedsman and seed grower. However, it may be considered as a natural response to the popular demand of "the most for the least money." Until the purchaser is willing to place quality above price he can hope for little change toward bettering the present condition.

The production of high-grade seeds is a work which entails considerable expense. Furthermore, it frequently happens that a poorly bred plant will produce more seed than one which is well bred. Thus where the seed grower is paid for quantity rather than quality of product, he can not be expected to put his best efforts into the production of seed of known value. There is a growing need for systematic breeding work in the production of improved seed similar to that which is well established in the production of improved animals. Plants possessing superior merit should be chosen, retained to produce seed and a careful record kept of their ability to transmit their desirable qualities. With the pedigree record thus obtained it would be possible to isolate strains of high producing value. It is safe to predict that as the importance of improved seed becomes better known there will arise a demand for it and the price charged will become a matter of secondary consideration. Until this time comes perhaps no better plan can be suggested than to purchase from several sources and make a preliminary test. The next year the main planting may be made from the lot which proved best in the trials. By continuing this practice from year to year the danger of securing an unsatisfactory crop is materially lessened. It is true that the plan will entail some outlay of money, but it is insignificant when compared with the difference between a poor and a good crop.

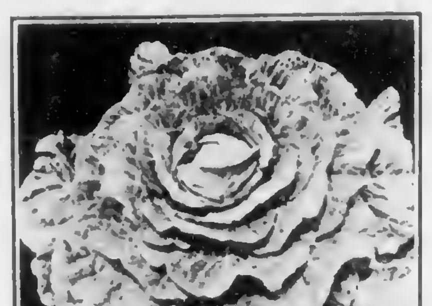

Fig. 3. A CHARACTERISTIC PLANT OF ROW No. 18.

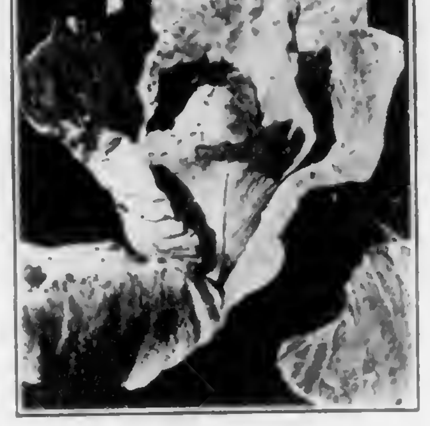

Fig. 1. A CHARACTERISTIC PLANT OF ROW No. 17.

SELECTING VARIETIES AND BUYING TREES

By Sheldon W. Funk, Berks Co., Pa.

In selecting the varieties of apples for our orchards we oftentimes have a very difficult problem confronting us, as there are so many things to be considered. These apple trees are to be permanent. It is true, we can change any varieties we do not like by top-grafting, but that throws us back three or four years and costs considerable money. Let us therefore carefully select only such varieties as are best adapted to our location, soil and markets.

A great many men look over the catalog, see a number of varieties which appear good on paper, send for the trees and plant them, without ever considering whether or not they are adapted to their conditions. The trees come into bearing and the varieties are not satisfactory; then they begin to abuse the nurseryman and everyone else with the exception of themselves. A good nurseryman can not afford to grow anything but good varieties. He doesn't have any one variety adapted to all conditions, but he does have different varieties adapted to all conditions, and it is our business to select those varieties suitable to us. Study your fruit papers and magazines and find out the varieties recommended by other growers. Then study your own conditions thoroly, and last of all, spend two or three days driving around in your own community, investigating the varieties and finding out which are most profitable with your neighbors. By that time you can come home and make a judicious selection.

In my first article I said apple trees have been planted very extensively within the last few years; that means more apples and more critical buyers. Your customers are going to demand high-quality apples, and if you can't supply them some other man will. You will have little demand for Ben Davis or any of that family, and you dare not plant apples of inferior quality if you want to make it a paying proposition.

First, then, quality. Next, shall we plant all winter apples, or will it pay to plant a few summer and autumn varieties? That will depend to a great extent upon market conditions. Where you have a good local market, you will, in almost every case, find it profitable to set some of the earlier varieties. I know localities in which the Red Astrachan, for instance, is the most profitable apple that can be grown. In using some of the earlier varieties it distributes the work to a greater extent, and also where you are depending entirely upon a local market you can handle a greater quantity of fruit.

Our ideal summer and fall apples are those which are high in quality, good in color and uniform in size. To be a good winter variety, the apple must possess quality, must mature properly upon the tree, must remain hanging until picked, and it must also retain its flavor until late in the season.

In a brief article of this nature we can not take up the particular varieties best adapted to each individual section, but can only offer a few general suggestions. The best summer varieties for the entire state are Red Astrachan, Yellow Transparent and Duchess of Oldenburg.

Among the best autumn apples which may be planted in any section of Pennsylvania are: Summer Rambo, Smokehouse, Wealthy, Gravenstine, Maiden's Blush and Hubbardston.

In the winter varieties we must be a little more specific. Varieties very well adapted to the entire state are Stayman's Winesap, Rome Beauty, Delicious, Jonathan, Grimes' Golden, McIntosh and Stark. North of latitude 41½ we can add Baldwin, Spy and Wagoner. In the southeastern section the Nottingham Brown will prove very profitable. The distance above sea level must also be considered, since a higher altitude has the same effect as a more northerly latitude.

The number of varieties to plant will depend upon whether you wish to plant a home orchard or a commercial orchard. In the home orchard you should set a greater number of varieties, so that you may have apples during all seasons of the year. In a purely commercial proposition I would not plant more than three, four or five winter varieties.

The matter of scalding in storage should also be considered, as this injury may not only be increased by improper care, but some varieties are far more susceptible than others.

The question of fillers will be the next matter which confronts us, and here we find a great difference of opinion. Under our conditions, peach trees have proven very profitable. We, however have learned to remove the peach trees just as soon as they have attained such a size as to injure the apples, which is, however, not before they have given us handsome returns.

Many men claim that apple fillers are very profitable. However, when we consider the number of years before an apple tree actually becomes profitable, the cost of the young trees, the fertility removed from the soil and the cost of removing the trees, it is rather hard to understand how the large profits are secured. To the man who only wishes to plant a few acres of apples, and, say, 1,000 peaches, I would recommend that he plant all permanent trees and each by themselves.

We are now ready to order the trees, and our orders should be placed as early as possible, so as to secure the very best stock and take fewer chances of substitution in varieties. In ordering, be as definite and to the point as you can. It is well to use some such form:

"Please book the following order——, to be shipped not later than———. Stock must be strong, vigorous and well rooted. One-year-old trees, four to five feet in hight, free from insects and diseases. Positively no substitution; if you do not have the varieties specified, refund money at once."

When a nurseryman receives such an order he gets the impression that you know what you want, and he will use a little more care in the filling of the order.

FERRY'S

Market gardeners and large planters everywhere place absolute confidence in Ferry's seeds. Professionals make their profits by knowing where to put their trust. Ferry's vegetable and flower seeds have averaged best for half a century. They are pure and they are vital. For sale everywhere.

1913 Catalogue free on application.
D. M. Ferry & Co., Detroit, Mich.

SEEDS

SEED CORN SIX VARIETIES HEAVY YIELDERS $2.00 PER BUSHEL

You want our **WHITE CAP YELLOW DENT.** Our stocks were grown by the winner of first prize at the recent Penn'a State and the South Carolina National Corn Shows.

GRASSES Clover at $11.00 per bu. and upwards. Timothy, Red Top, Orchard, Ky. Blue, Alfalfa, Vetchas and 30 other grasses. White, Alsike, Mammoth, Crimson and Sweet Clover.

SEED OATS, SPRING RYE and BARLEY, BUCKWHEAT, FIELD PEAS and BEANS

COW PEAS You should plant NORTHERN GROWN COW PEAS of the earliest varieties. We have them in nice qualities at moderate prices.

MAINE GROWN SEED POTATOES—CLEAN—SOUND COBBLERS, EA. OHIOS, EA. ROSE, CARMANS, MOUNTAINS, GIANTS, RALEIGHS, STATE OF MAINES, GOLD COINS.

EVERYTHING FOR THE FARM—MODERATE PRICES You want our 32 page catalog. It is free. Ask for it.

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GREAT DANE OATS

Bred in Denmark, imported and acclimated in Michigan and Northern Ohio. Big heavy meat, thin shuck. Customers report they out yielded other oats sowed beside them three to one. Ninety to 110 bushels per acre not an uncommon yield. Very stiff straw. Stools very heavy. Price ten bushels, $1.75 per bu. Less than ten, $2.00 per bushel.

DUNCANS EARLY YELLOW DENT CORN

Bred and seed grown in Michigan. Won state championship prize. Very deep kernel, small cob, beautiful golden yellow, enormous yields. Ripens in ninety to hundred days. Get away from that big cob short kernel corn, order some DUNCANS EARLY YELLOW DENT, and your motto will be one hundred bushels per acre on every acre, and corn that is ripe before the frosts come. Price per bu., $3.00.

BLUE MOUNTAIN ENSILAGE CORN

Grown in high altitude in Blue Ridge Mountains, mammoth forage, ripens earlier than ordinary ensilage. $3.00 per bu.

OATMAN & MONFORT, Cleveland, Ohio.

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Theilmann's Seeds are always reliable, we know it will pay you to write them for their prices on Clover, Timothy, Corn and Garden Seeds. Get the catalog.

THEILMANN SEED CO.
ERIE, PA.

THE HOME BELT CORN, A SPECIALTY

Develops a strong eye, drives a vigorous sprout. Comes up healthy with a dark green color. Grows very thrifty to medium sized stalk. Produces not one ear, but one to three. Cob thin and grains tightly packed. We believe raising one hundred bushels to an acre. More corn you could grow you know. You really want what yields and pays. Plant Home Belt Corn, we ship prepaid. To prove it, we ask no money. Let it first grow, to prove itself. Write for particulars, postage will be refunded.

HOME BELT CORN CO., Box 111, HARRISBURG, PA.

Weedless Field Seed

Are what we are trying harder than ever to furnish our customers. FREE SAMPLES will show that we come pretty near doing it. In many varieties we DO IT. Red, Mammoth, Alsike, Alfalfa, Timothy, Orchard Grass, Sweet Clover and all others.

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PURE FIELD SEEDS

CLOVER, Timothy, Alsike, Alfalfa and all kinds of Pure Field Seeds direct from producer to consumer; free from noxious weeds. Ask for samples.
A. O. HOYT & CO., Fostoria, Ohio.

FREE to farmers' and gardeners' boys and girls. How to make $50 easily at home. No fake. No agency. Honest toil. Write to-day.
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SEED CORN—IMPROVED EARLY LEAMING—For crib and silo. 100,000 planters. 25th year. $1.50 per bushel and less. Sample, etc., free. H. E. TWEED, Ripley, Ohio.

OATS Reg. Swedish select and Imp. American. Two best yielders. Also SEED CORN, Seed Potatoes, Clover, Timothy and GARDEN SEEDS. Samples and catalog free. THEO. BURT & SONS, Melrose, Ohio.

SEEDS, Flower, Vegetable and Farm at Half Price. Send list of wants for prices. ALLEN & SONS, Geneva, O.

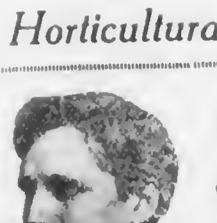
SWEET CLOVER SEED, Large biennial cultivated variety for hay, pasture and fertilizer. Price and circular how to grow it sent free on request. E. Barton, Box 8, Falmouth Ky.

Soy Beans—Genuine Sable, the kind you need. Early and productive, the best by test. BAILEY ORCHARD CO., Fishersville, Va.

OATS—Swedish Select, Siberian and Big 4. Also SEED CORN and GRASS SEEDS. Samples and Cir. free. Reid Burt, Melrose, O.

BEST SEED POTATOES Catalog of 70 Varieties Free. A. G. ALDRIDGE, Fishers, Ontario Co., N. Y.

Horticultural Queries.



This department is conducted by Prof. H. A. Surface, State Economic Zoologist. Questions answered and timely and practical problems in treatment and control of farm and orchard pests discussed. Our readers are given the benefits of the advice of one of the foremost authorities in the country in this department. Address all queries to Pennsylvania Farmer, Philadelphia, Pa.

SPRAYERS

I have an orchard I wish to spray; also I wish to spray my potatoes. If you know of a sprayer that you can recommend, please send me the address.—J. L. H., Washington, Pa.

Concerning the kind of sprayer that you can use for spraying both your orchard and your potatoes, I must say that, in the first place, I do not know the size of your trees. This must be considered in making a reply. If they are young trees, I certainly would recommend you to get a tractor sprayer, which gives power from the wheels turning.

This is merely a barrel mounted on its side on a cart, with an attachment for spraying about five rows of potatoes at a time; or the crop spraying attachment can be taken off, and two leads of hose can be put on for spraying trees. Where the trees are comparatively small, this will work all right. In the orchard for the first five to seven years it will be found quite satisfactory, and is exactly the apparatus that I use most in my large plantings, and find cheapest, and recommend to others. As the trees get larger, one can spray every other tree, or every third tree with it, and go over the ground again to spray the others. The reason for skipping one or more trees is that there is not enough power generated by the rotating wheels to spray all the trees after they have reached a fair size and demand that the apparatus stand still very long while the operator is spraying them. It is, of course, a good hand lever pump, with a lever attached to the outfit, and even tho it must stand still at the tree to spray it, it is possible to keep up the power and do the spraying by one man pumping with this lever.

However, if I had an ordinary farm orchard of fully grown trees, and wished to get the cheapest outfit for satisfactorily spraying the orchard, and also potatoes, I would get an ordinary barrel sprayer of a kind that has an air chamber in connection with it, to give continued even pressure, and which works by a handle like a pump, and has in it an agitator, or stirrer, to stir up the liquid. I would order two leads of hose, each 25 feet long, and two extension rods, one five feet and the other eight, or would use gas pipe for an extension rod, slipping it thru the hose, in order to make it easier to hold it. This is the standard apparatus for an average farm orchard.

If you want something that will do more work, or do it easier, or be more easily pumped, and yet have a hand power outfit, get a vertical lever pump, which means one with a handle that swings back and forth as you push it horizontally from you. One man can easily work this all day for two leads of hose or two men spraying, and not be tired out, as he would be with a barrel pump. Of course, as in the use of a barrel pump, one man must pump and another must do the spraying. It is possible to change occasionally as either becomes tired by either part of the work, if desired.

For spraying potatoes, if you have a barrel pump the proper thing to do is to get a crop-spraying attachment, which costs only a few dollars. This consists of a horizontal pipe, with arms and nozzle attachments over the rows, and a hose to connect the horizontal pipe (with its nozzles) to the barrel. Thus the barrel can be hauled in a cart or light wagon, with the operator standing in the wagon or on the platform, and pumped by hand, as the horse walks along. One man can easily operate the barrel pump with a crop sprayer attachment, and at the same time drive a horse, if he has a horse that is a leader, such as every satisfactory farm horse should be. There are several manufacturers of spraying apparatus, and I recommend that you write to them for descriptions of their outfits and their prices. We can name them by private correspondence, if desired, but recommend the firms advertising in this publication.

Replacing Dead Peach Trees

I have a peach orchard, and a number of trees are dead. Would it be advisable to take them out and set others in their place? Kindly give me your opinion.—W. C., Mechanicsville, Pa.

Do not hesitate to remove the trees that are dead, and put others right back in the same places. All that is necessary is to loosen the ground well with a plow or spade. If sod commences to form around the young trees, turn it down, and always keep your peach trees cultivated during their growing period. I know some of our most successful peach growers (for example, Hon. H. C. Snavely, of Lebanon County) who have for years made a practice of setting a tree as soon as possible in the spot where another died, and even tho the tree, in some cases, had died of yellows, there has been no evidence of this disease being conveyed thru the soil to the new tree planted where the old one stood. The treatment of the trees after planting can be the same in regard to pruning, spraying and cultivating as the remainder of the orchard receives.

This is a source of considerable loss, to have vacant spaces in orchards. It is far more sensible to keep these filled up by planting in the empty spaces, and keeping the orchard full, than to attempt to plant more trees on other ground. All kinds of orchards should be kept filled by planting a tree as soon as possible where an old tree dies. This is one of the features of economic fruit production. A single tree missing on an acre of ground results in enough loss to pay for all the cultivation, and, in many cases, all the fertilization that that acre requires during an entire year. The expense of orchard management, in almost every detail, is always greater, if there are trees missing here and there, than tho all the trees were present. Consequently, what is not obtained in the way of a fruit crop by keeping all the trees in place in the orchard, becomes almost clear loss to the farmer or fruit grower.

Old stumps or trees can be grubbed out or blown out by dynamite, and the hole refilled with good earth, and the tree set in exactly in the proper place to line with other trees in each direction, so that it will be in proper position for cultivation and other orchard work. The old idea that a tree could not grow where one had died is wrong, and it will add considerably to the productiveness and beauty of orchards to know that all vacant spaces can be filled with economy and profit, and to use this knowledge.

50,000 SUBSCRIBERS

Pennsylvania Farmer has about four times as many readers now as it had one year ago. We want to make this 50,000, and with the generous help of our friends we can do it. For only 25 cents (or 5 for $1.00) we will send Pennsylvania Farmer to new readers every week until January 1, 1914. You have some friends who should be reading it. Will you help us reach them?

Sweet Clover.—Circular 129 of the Ohio Experiment Station, Wooster, Ohio, contains much valuable information regarding sweet clover. It says: "Sweet clover is not a noxious weed, and is of unquestioned value in restoring worn and eroded soils. It is a valuable forage crop and worthy of use as such in situations where better crops can not be grown successfully. In seeding, its lime and inoculation requirements should be carefully looked after. The bulletin is mailed free upon request from the above station.

A Real Hill-Climber

Level ground is best for farming, but you can farm the hillsides too, with a

RUMELY OILPULL TRACTOR LA PORTE IND.

and do it profitably. It is necessary to stop the wash—deep plowing will do it and OilPull Tractors plow deep—they plow up hill and down.

You may not *farm* the hillsides but you probably have hills to *climb* on the way to market and OilPull Tractors will take a full load up a stiff grade. We have an interesting pamphlet "Through the Mountains of Colorado with an OilPull Tractor." It will convince you. OilPull Tractors are strong—they last a long time—are reliable, inexpensive to buy and to operate. They carry enough fuel for a twenty mile trip under load.

Send for our valuable Data-Book, No. 353, on the OilPull and ask the name of our nearest dealer.

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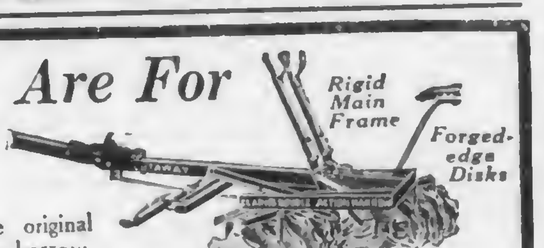
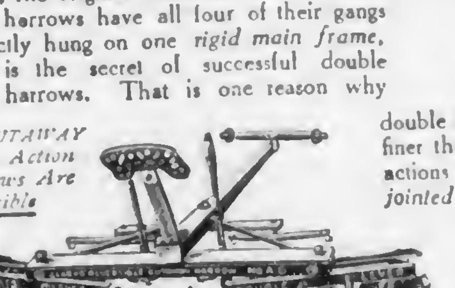
These Harrows Are For Intensive Tillage



Remember, the CUTAWAY disk is the original "cutaway"; the CUTAWAY double action harrow, the original double action; the CUTAWAY reversible harrow, the original reversible; the CUTAWAY extension head harrow, the original extension head. CUTAWAY double action harrows have all four of their gangs compactly hung on one *rigid main frame,* which is the secret of successful double action harrows. That is one reason why double action harrows grind and pulverize the soil finer than other harrows. CUTAWAY double actions are all equipped with the *detachable jointed tongue,* which can be removed or replaced in one minute, making the harrow into either a tongue or tongueless machine as desired. Both the single action and the double action are made with extension heads for orchard work, and can be closed for regular field work. They are equipped with the famous CLARK cutlery steel disks, *forged* sharp. Ask your dealer to show you CUTAWAY Implements. If he can't, write us. Ask for new 48-page book, *"The Soil and Intensive Tillage."*

Cutaway CLARK'S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Makers of the original CLARK "Cutaway" implements

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MR. E. A. ROGERS,

one of the largest and most successful potato growers in Maine, in his new book, **Practical Potato Growing,** gives in detail the cultural methods which have given Maine the largest average per acre yield in the country. The book covers preparation of soil, care and cutting of seed, cultivating, fertilizing and spraying. Sent postpaid for only 50 cents in coin or stamps. Address

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For only 25 cents (or 5 for $1.00) we will send Pennsylvania Farmer to new readers every week until January 1, 1914. No good farmer can afford to overlook this. Will you help us by interesting your friends in this.

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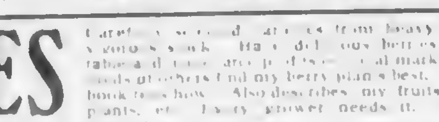
Kept One Year On 1 Acre of Eureka Corn. This seed corn yielded over 70 tons on one acre in 1911—enough to feed seven cows a whole year. Latest Eureka corn crops expected to beat even this record—no other corn has ever equalled it.

EUREKA CORN
grows tallest—has most leaves—more ears

Why plant ordinary corn that yields only 15 to 25 tons an acre, when you can get 70 tons an acre at same price. Write for our 1913 catalog, quotations and list of our wonderful varieties of big-yielding corn and seeds.

ROSS BROS CO., 41 Front St., Worcester, Mass



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The Dairy

FOUNDING A PUREBRED HERD

Careful deductions made from the reports of recent sales of purebred dairy cattle show that good cattle are in demand. Breeders and farmers who have the money are willing to part with it when they find the right kind of dairy animals. There is a bright particular star of promise in the breeder's firmament at the present time. This being demonstrated, it is up to those who have the combination of good land and ready money to take hold of the business and produce high-class dairy cattle to supply the demands of an increasing trade.

With milk producers seeking high and low for good cows, and any young cow that shows promise of dairy ability selling for from $80 to $100 and upward, surely there is a big incentive to breed cattle of sterling quality. Nothing approaching the proportions of a boom is likely; it is the increased demand, due to a steady appreciation of the purebred dairy cow as a factor in the betterment of agriculture.

While everything indicates one of the most prosperous eras for the foundation of herds of such cattle, the necessity of careful selection is just as pressing as ever. Feed will continue high in price, consequently, the smaller number of animals in the herd, the less it will cost to feed them, and if their progeny may be sold for as much as that of a larger number of producers, not so good, it is safe to say that the small but choice herd will make the most money.

As a rule, other factors being equal, it is better to buy the females of breeding age, either with calves at their sides or safe in calf to sires whose breeding coincides with them. Many a breeder has made a successful beginning from the purchase of a few old cows, but it is usually better to seek those that are yet in their prime or just reaching it. They will cost considerable more, but they will be worth it. To secure such a herd of females means a lot of hard study and close investigation, but if the beginner is not willing to devote the closest study to the various phases of breeding, he had better keep his money in the bank and devote his energies to some other line of farming.

A common mistake made by beginners is to buy too many cows and young females, when the same amount of money invested would bring better results if just half as many of the better quality were bought. Intelligent buying is part of the success of a breeder, just as much as good salesmanship is later on when there is a surplus to dispose of; but it is always a mistake to buy just because something is cheap. It always pays for a young breeder to attend public sales, live stock exhibitions, and to visit some of the prominent herds before he makes a purchase. Then when he is ready there are experienced breeders who will gladly assist him in making his selections.

Regarding the bull, it is usually better to select one that, having served his time in some established herd, is being disposed of to make room for one of lesser age. By examining the young animals sired by the bull, one can form an accurate idea of his value as a sire, and there is less risk to run than there is when a perfectly untried sire is purchased. When an old sire is selected the young breeder will be sure of at least a measure of success until he has grown accustomed to the business and his eye has become sufficiently trained in the selection of the sorts that find favor among the most liberal buyers. From any point of view, the use of a tried sire is to be advocated. He will prove an anchor to windward in time of trouble. It is true that it will cost more, but the price will be sure to come back many fold. In the meantime, having on hand a sire that will mate with the collection of purchased cows, search may be made for a youngster that will mate well with the more uniform progeny of the tried sire. This will be found a much easier task. If a young sire can be found that breeds from the heifers of the old sire a uniformly high-class progeny, then the foundation cows may be gradually sold from the herd and a more uniform lot substituted merely by the process of elimination.

With a herd of cows all having the impress of one prepotent sire, success may be attained very much more readily than with a herd of various types and markings. The value of a tried sire in rounding the corners, so to speak, of a collection of cows from various herds and placing the young breeder in possession of a herd of females that present much uniformity of type and quality, can hardly be measured in dollars and cents. It is only thus that a beginner may succeed in bringing his herd up to a high standard, unless he should have the singularly good fortune to obtain a young bull that proves to be one of the really great sires of the breed.

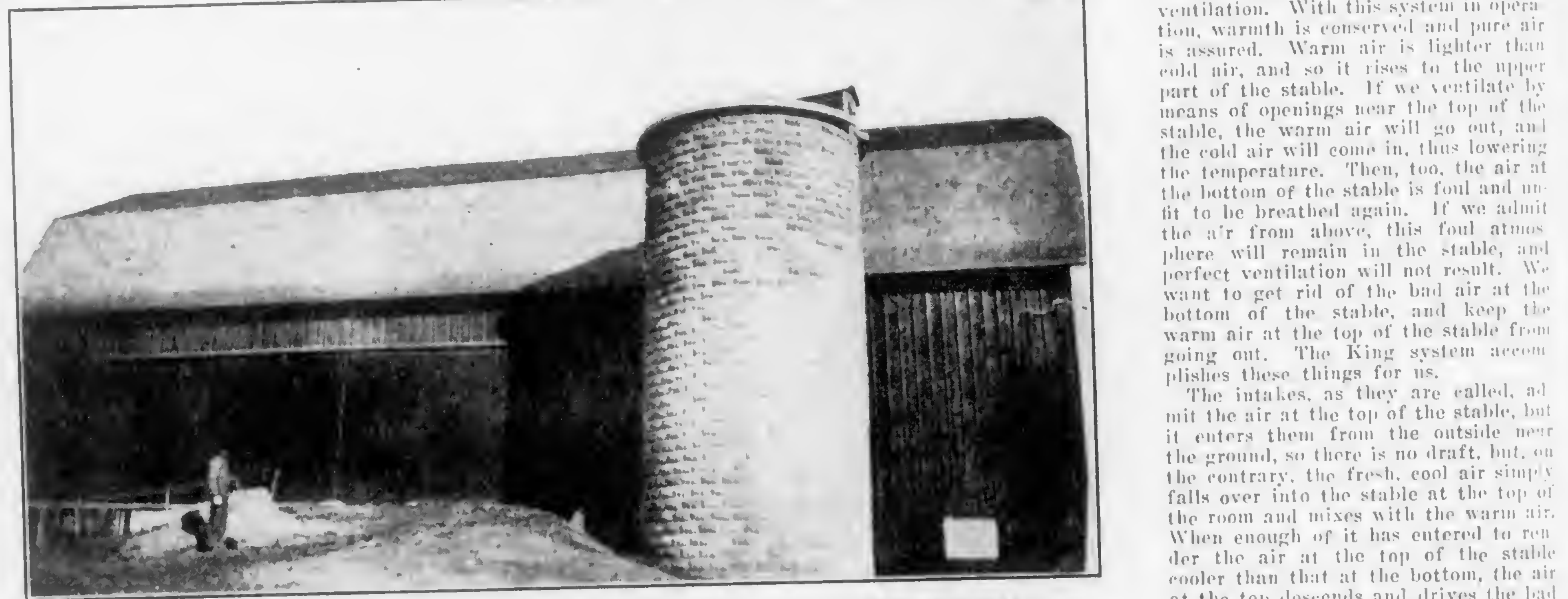
The beginner must make a constant study of the essential merits of breeding animals and familiarize himself with the general type and minor features that should characterize his animals in order to render them most suitable and profitable for the persons into whose ownership they ultimately come to perform their service. The cow that shows a profit at the end of the year gives more real satisfaction to her owner than a phenomenal producer who does her work at a loss. The dairyman's ideal of perfection is sure to be the cow that gives him the best returns, consequently she must not only be a large producer but an economical producer. In judging purebred dairy cattle for what they will produce, ancestry must be weighed to an extent of at least 50 percent of the whole. To the man who keeps a sire or dam for producing young, a knowledge of pedigree is of as much value as the make-up of the animal itself. Estimating the value of pedigree will always be a determining factor in breeding purebred cattle, and the greatest success will be achieved by those who master and utilize this knowledge and do not lose sight of the pedigree's best proof, the make up of the animal itself.

The young breeder frequently attaches too much importance to pedigree, as it blinds him to the necessity of going behind it to study the merits of the individual. Pedigrees merely trace the line of ancestry. It is up to the buyer or breeder to trace out the real merit of the ancestry as best he can. With all pedigrees there should be a record of performance. We now have what is known as the advanced registry that gives the production record of the registered animal. This advanced registry record is an important factor in selecting a herd. Like the pedigree, it can not guarantee that the animal in question will inherit the power to produce as well as its ancestry, yet it is a guarantee that the animal stands a better chance of being a profitable producer than the one about whose ancestry nothing is known. The man who buys advanced registry stock is on safer ground than one who takes chances of discovering an equally good one. He may secure a prize, but the chances are vastly greater that he will buy just an ordinary producer, no better than thousands of grade animals that could be purchased for less money.

There is no better evidence of the value of an advanced registry record than that given by definite examples. The calf born from the Holstein-Friesian cow that made the world's record for one year's production, was sold at a normal price before the record was made. As soon as the cow's owner realized what she was doing he bought the calf back, and sold her when the record was completed for $8,000. Was this official record of any value to the seller? The Jersey cow that holds the world's record for three consecutive years was bought for less than $200 before it was known what she could do. Today there is no price upon her, and it is reported that $10,000 has been refused for her. Is her record of any value? The famous Guernsey cow that has established a record for her age was formerly owned by an eastern dairyman, and it is safe to say that her calves never brought what may be called high prices. Today, neither this cow nor her calf can be bought for any price; an offer of $10,000 did not get her. These facts show that the advanced registry record is very valuable in selecting dairy cattle.

When one begins to touch upon showing records, he is sure to stir up a protest from breeders of dairy cattle. Fortunately there are many breeders who believe that it is practical and possible to combine usefulness with beauty, and these men are finding a ready sale for every animal they can produce. There is no reason why breeders should sacrifice beauty and uniformity to produce profitable animals. Just so soon as a breeder ignores show-ring standards and pins his faith entirely on advanced registry records, just so soon will he invite failure, because of the two cows having an equal capacity for production, one being true to type and the other coarse and rough, the prospective buyer will take the one which pleases his eye. The ideal dairy cow combines beauty with utility.

Careful selection of sires and dams influences the heredity tendency to produce larger quantities of milk, butter and suitable breeding stock. A liberal system of feeding and suitable environment develops these inherited tendencies. Heredity is a peculiar force. We can use it to do some things, we can head it off and prevent it doing other things we do not want it to do, and frequently it does things that no one can account for. Much that appeals to the eye or goes to make advanced registry records is caused by what goes in at the mouth. Good breeders who have made a success have been generous feeders. Feed is not all, for there are many cows that can not return a profit under any system of feeding. It is the breeder's duty to weed out all unprofitable cows by the process of elimination, whether they are purebreds or grades. Good breeding supported by liberal feeding will bring success to the young breeder. These, of course, must be reinforced by good business management and strict integrity, for there is nothing that counts quite so much in the business of breeding as a good reputation for honesty and fair dealing.—W. Milton Kelly, Erie Co., N. Y.



A CONCRETE BLOCK SILO. BLOCKS ARE 8 x 10 INCHES, 1 TO 6 OF CEMENT AND SAND.

MANAGING A WINTER DAIRY

In the successful handling of the winter dairy, much thought as well as labor is required. If success is attained, it will be because out of our thought and labor certain results have come. To begin with, the stable must be right. It need not be expensive, but it must answer the requirements of the herd. First, it must be comfortable. In some sections, not one stable in ten is fit to serve as a home for a good dairy. We are providing far better quarters for our live stock than was the custom 50 years ago, but it is surprising how much remains to be done in this regard. Our first thought should be for the comfort of the animals, and our wish to see them comfortable should lead us to find some way to make our stables warm. Almost any kind of stable can be made comfortable at small expense if we will but make up our minds to do the work, and make the small necessary outlay of cash.

The stable should be well ventilated. For the large stable, the King system furnishes the most practical method of ventilation. With this system in operation, warmth is conserved and pure air is assured. Warm air is lighter than cold air, and so it rises to the upper part of the stable. If we ventilate by means of openings near the top of the stable, the warm air will go out, and the cold air will come in, thus lowering the temperature. Then, too, the air at the bottom of the stable is foul and unfit to be breathed again. If we admit the air from above, this foul atmosphere will remain in the stable, and perfect ventilation will not result. We want to get rid of the bad air at the bottom of the stable, and keep the warm air at the top of the stable from going out. The King system accomplishes these things for us.

The intakes, as they are called, admit the air at the top of the stable, but it enters them from the outside near the ground, so there is no draft, but, on the contrary, the fresh, cool air simply falls over into the stable at the top of the room and mixes with the warm air. When enough of it has entered to render the air at the top of the stable cooler than that at the bottom, the air at the top descends and drives the bad air, which is in the lower part of the stable, up and out thru the ventilator shaft. So the problem is to keep the warm air at the top of the room from escaping and get rid of the foul air at the bottom. In this way it is possible to keep the stable warm on cold days and at the same time have perfect ventilation.

In case the stable is small, we can ventilate by means of the muslin curtain. While this method is not nearly as satisfactory as the one already described, it is probably the most practical for a stable where a few cows are kept. In either case, however, we are presuming that the walls of the stable are tight and warm.

The floors should be of concrete, altho if the cows are to lie on the concrete, they should be kept well bedded. Concrete floors are usually close to the ground, and drafts of cold air can not sweep under them. A plank floor, two or three feet above the ground is usually a cold affair, because the winds blow under it, unless the wall under the building is very tight.

The manner of fastening the cows is more or less important. The writer has swing stanchions, but does not like them as well as what is known as the model stall. In fact, after seeing pretty nearly every device by which cattle are secured, it is our opinion that this stall is the most practical thing for fastening the cows during their stay in the stable. It is cheap, it is comfortable, and the cows are always clean, if the dairyman does his part.

The man who has a stable that is right should keep his cows in it most of the time during the winter. The notion that the cows need exercise and must be turned out in the cold is without foundation. The cow giving milk has all the exercise she needs. If we keep her warm and comfortable all the time she will reward our efforts in her behalf by doing her best for us. If we turn her out in the cold and the storm, to stand in some corner and shiver and wait while we are in town, she will have to burn up a lot of hay and grain to keep warm, and we will have to pay for it.

A cow will endure a lot of hard usage and live and give some milk. She will travel for a long distance thru the storm and drink ice water out of the brook. She will stand in the barnyard and shiver, waiting for us to drive her to a shelter, while her hair fills with falling snow, and when at last she is back in the stable she will fire up that furnace of hers and warm the ice water, and melt the snow and boil the water out of her hair, but she will burn butterfat in that furnace all the time, and it will cost us too much. It is far cheaper to provide the conditions which make this part of her work unnecessary.

The ration is probably the most important factor in the management of a dairy. In the first place, it should be liberal. The cow is a machine for the manufacture of milk. The food she consumes is the raw material out of which she will manufacture the milk, which is her finished product. The more she consumes of raw material, the larger will be the finished product, and we should feed her the last pound she will consume without unnecessary waste.

But no man will do this unless he has faith in the cow. Right here is where many men fail. They have not faith enough in the cow. They can not get over the notion that it is a useless waste to feed a cow a liberal ration of good grain. They expect to feed a horse grain, but to feed a cow even more than a horse, and to expect to make any money out of it, takes more faith than they can muster, and so they keep on scrimping their cows, and their profits are lessened in proportion. No man can become a successful dairyman until he has faith enough in the cow to believe that he can trust her with a liberal ration of roughage and grain and get a financial reward for his faith.

The ration should be succulent. When the cows are turned out in fresh green pastures, at the coming of the early summer, they will give a large flow of milk, not alone because of the amount of food consumed, but because that food is of a succulent character. If the amount of grass eaten by the cow in the pasture were dried and fed to her in that condition, she would give much less milk, not because of the lack of food, but because her ration would be dry, and in consequence assimilation would be less perfect. A cow will consume dry feed enough to enable her to give a large flow of milk, but digestion will be less complete, and hence she will have to eat a larger quantity of food to produce the same amount of milk. It is doubtless true that a winter dairy can be kept without a silo, and that a large amount of milk may be gotten from the cows in this way, but the silo is simply indispensible to the man who wants to produce milk at the lowest cost.

The ration must also be properly balanced. The albumen in the blood can not be made from carbohydrates in the ration. The protein in the milk must come from protein in the ration eaten by the cow, and we can limit the milk flow by not providing the necessary protein in the feed. There is usually a sufficient amount of carbohydrates in the roughage and grain fed, so that we need not worry much about that, but we simply must think about the protein. It often happens that we must buy it, and in case we must, we want to buy it as cheaply as possible. Cottonseed meal, gluten meal, ground oil cake, are all rich in protein. Wheat bran is an old and reliable source of protein, but it is usually rather costly. Every up-to-date dairyman should be familiar with the analyses of all dairy feeds, and should scan the market quotations closely and buy his protein at the point where it may be obtained for the least money.

Tho winter dairy is a source of profit to any and every man who is willing to engage in the business. Cows that freshen in the fall will produce more milk than those that freshen in the spring. We have more time to attend to the needs of our cows in the winter. The hired man can be retained, if necessary, and work provided him for the full year. The man himself is better off for the work of caring for the cows than he would be to do nothing, and so it is a good proposition all round. The grain that must be bought will return a good profit in tho extra milk produced, and will yield three-fourths of its value in fertilizing material.

We are allowing thousands of tons of feed to be shipped abroad every year, to be fed out in foreign countries to enhance the profits of foreign dairymen and build up foreign soil. In the interest of American dairymen, and of all our people, we should stop this feed on this side of the Atlantic, and feed it out at home. American dairymen should get the profits, and American soil should receive the consequent improvement.—W. F. Taylor, Michigan.

RED CLOVER

Like every other legume, there are certain conditions absolutely required for a good growth of red clover, an enumeration of which might be of benefit. In the first place, the soil must be well drained, for the bacteria necessary to the profitable growth of any legume can not exist, let alone grow and multiply, in a water-logged soil. These bacteria are necessary because they can assimilate nitrogen from the air of the soil, and as there is no air in a soil that is saturated with water, clover will not enrich a soil that is continually wet any more than would corn or oats.

The next essential is a moderate amount of lime to correct the acidity, for these bacteria can not exist in an acid soil any better than they can in a wet one. Thirty bushels of burnt lime will correct the acidity of almost any soil sufficiently to produce a good growth of red clover, altho nearly twice as much would be required for alfalfa.

Humus is, perhaps, the next most important requirement. A soil that is full of humus takes in the rainfall rapidly and remains moist a long time after. A soil that lacks humus can not grow a good crop of clover. It requires heavy applications of manure, or the plowing down of one or more green crops. Ground that is too poor to grow anything else will, with the help of a little commercial fertilizer, grow rye, and if this is plowed in when two or three feet high, and followed by cowpeas, also plowed in at the maximum growth, and the ground seeded to clover, a heavy crop of clover can be expected.

Lime would be necessary in this case to counteract the fermentation of the green matter plowed down. This process may appear expensive, but it really requires very little money, and the two crops can be turned under the same season, so that there will still be time to seed the clover. A moderate amount of plant food is also necessary, altho I have grown immense clover on land that was lacking in fertility.

Thoro working and preparation of the soil is another essential to success, whether the clover is seeded in the growing wheat in the early spring, with timothy or other grasses in August or September. If seeded with wheat, which is the most common practice, the ideal time is the early morning, when the ground is cracked open by the late spring freezes. I have grown some very heavy hay crops by seeding to grass alone in late August or early September, but usually it is more convenient and practical to seed in the spring with the wheat. I have found that locally-grown seed is a great deal more dependable than a Western or an imported variety, if it is clean.

Tho I have grown heavy clover hay crops for several years, I have made more money out of the second or seed crop. In order to secure this, however, it is necessary that the first crop be cut early, while the heads are still in bloom.

I do not claim that red clover will grow as much or as good feed on the same soil as will alfalfa. I have grown over five tons of well-cured alfalfa hay an acre in a season, but it requires considerable work and expense to start, and once we have a good stand we want to keep it going for several years. On this account it does not work at all well in rotation with other crops, while red clover does—in fact, the success of the entire rotation might almost be said to depend on the clover.—T. A. Tefft, Chautauqua Co., N. Y.

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FODDER VS. SILAGE

We have been cutting some corn fodder, as we call it in this part of the country, more properly, I suppose, corn stover. The quality of this fodder is splendid, the corn having been cut and shocked early, while much of the plants were yet quite green. One timorous neighbor assured me, when the cutting was being done, that he did not like to cut corn till it was ripe, as he did not like to have a lot of mouldy, spoiled corn. Of course, I knew he meant me.

As a matter of fact, we had absolutely no spoiled or mouldy corn, except an occasional ear from a stalk that had blown down when the ear was forming. And we did have some of the finest fodder imaginable, green, aromatic, palatable and nutritious. Some of this was the fodder we were cutting today. We do not cut much at a time; just enough to last us three or four weeks, as we think it retains its flavor, and consequently its feeding value, in the bundle better than after being cut. We use our ensilage cutter with blower for cutting the fodder, and can blow the cut produce just about where we wish.

Our ensilage cutter has four knives, and we have them set to cut ensilage into half-inch lengths. This almost grinds dry fodder, so when we are ready to cut fodder we take off two of the knives and the remaining ones, being somewhat dull (we have plenty of power) we secure a very fine quality of cut fodder, with the stalks crushed, with no sharp points to irritate the mouths of the animals.

Now, I want to compare this excellent fodder with corn silage. We raise pretty good and generally pretty big corn in this part of the country, and when we cut it for silage we go about as close to the ground as we can get, either when the cutting is done by hand or with the harvester. As a rule, practically all the corn plant goes into the silo, and all users of silos know that if the silage is good, that is, well preserved, and is not overfed, absolutely all of it is eaten.

Not so this fodder. We esteem such corn fodder as I have described very highly for feeding horses and colts, and feed most of our supply to those animals. The fodder is, no doubt, just as good feed for a cow as it is for a horse or mule, but not as good for a cow as good alfalfa hay or mixed clover and timothy hay; hence as our supply of fodder can be consumed, usually, by our horse stock, the horses get the fodder and some hay, and the cows and young heifers get hay. It is true that we feed the horses the cut fodder pretty liberally, that is, about the amount we think they should have, and fully half of the feeding goes finally from the mangers to the stalls for bedding. This refuse is composed of coarse butts of the husks and of the stalks. We might "starve" the horses into eating more of the amount they now refuse, but we do not regard that as an economical proposition.

Then we could reduce this rejected portion of the fodder to comparative fineness and mix it with mill by-products and flavor it well with black-strap molasses—an excellent feed, almost worth its cost for its tonic qualities—and get the horses to eat it, but it is highly probable, under existing prices for feeds as produced and sold in this country, that the feed so prepared would "cost more than it would come to." At least, the reduced corn fodder would give a "filler" for the mixture of much more integrity than the fillers used in many of the cheap mixed feeds of commerce.

But we use it for bedding, and let it be recorded that there is no better bedding for animals than cut corn fodder, while the uncut stalks used for the same purpose are a vexation to the temper and an abomination unto the soul of the man who cleans the stables; while if this work falls to the hands of a boy to be done—well, boys will gravitate from the farms.

I said that in cutting our ensilage corn we secure practically the whole stalk. The corn from which this fine fodder was made was cut and shocked by the acre on contract, by a long legged man, and many of the stubbles he left in the field are from three to four feet long. We did not have it "nominated in the bond" of our bargain as to the height of stubbles he should cut, and I made no objection when I saw how much of the stalk he was leaving standing, and did not much care, as probably being left in the field they get back to the land most cheaply.

I have been told that half the feed value of the corn plant is in the stalk and half, or more, of the stalk's value is below the ear. This is probably correct, but I can say that if you want a self-respecting, well-fed animal to conserve resources, or if you wish the feed value of the stalk of corn, you must have it via the silo. And doesn't agricultural conservation mean good farming? And doesn't it mean a thousand times more to stable resources of this country and for all time than all the sensational political conservation that can be written into party platforms and party promises? This is conservation of time, of human endeavor, of life, of soil and feed, moisture, animal and mechanical efficiency, of everything about the farm, the farm home and of all that grows out of the farm. If this all be true—and it is, and much more also—why shall we not more fully use our wonderful corn plant?—W. F. McSparran, Lancaster Co., Pa.

PENNSYLVANIA HOLSTEIN ASSOCIATION

The Pennsylvania Holstein Friesian Association organized at Harrisburg, February 28, 1913, and had a very interesting and profitable meeting. The following officers were elected for the ensuing year: Pres., Hon. John Geiger, Kimberton, Pa.; vice-pres., G. M. Carpenter, Wilkes-Barre, Pa., and S. H. Graybill, Elizabethtown, Pa.; sec., W. M. Benninger, Walnutport, Pa., and treas., H. C. Reinhold, East Petersburg, Pa.

Constitution and by laws were adopted, making the membership fee $2 and annual dues $1, the annual meeting to be held at the same time the State Board of Agriculture and State Live Stock Breeders' Association, etc., hold their annual meeting, and special meetings at such places and time as arranged by the executive committee. A resolution was unanimously adopted protesting against the proposed bill to repeal the color clause and to reduce the license to retail dealers in oleomargarine.

By request of Mr. Martin, director of farmers' institutes, to some of the members that this association endorse some member as a lecturer at farmers' institutes on breeding and dairy topics, Mr. W. M. Benninger was unanimously endorsed. Quite a lively discussion was carried on the oleomargarine question, epidemic abortion, milk standard, etc., which were well discussed by Messrs. Rowe, Geiger, Reinhold and others.

It was brought out at the meeting that there are over 1,000 breeders and owners of Holstein Friesians in this state, and that there is a bright future for the Black and Whites. The attendance and interest at the meeting show that the Pennsylvania breeders and owners of Holstein Friesians are alive to the benefits of such an organization.

CARBOLIC ACID FOR CONTAGIOUS ABORTION

Bulletin No. 90 of the Montana Experiment Station reports of tests of the internal use of carbolic acid for the prevention of contagious abortion in cattle. The experiments were carried on in three herds, and the general conclusions drawn were as follows:

Carbolic acid, either fed in solution or injected hypodermically, seems to be a specific against contagious abortion. Cows, as a rule, will eat with apparent relish as much as 750 cubic centimetres of a 4-percent solution of carbolic acid in feed daily. The hypodermic injection as a treatment in an affected herd involves less labor than feeding. In cases of impending abortion, carbolic acid can be injected in sufficient quantity to cause a staggering gait and dilation of the pupil of the eye (when it should be withheld for from 10 to 15 hours and repeated) with no apparent unsatisfactory after effects.

All males used for breeding purposes should be treated with carbolic acid, either hypodermically or in the feed. Besides this, the sheath should be thoroly disinfected, both before and after service. Contagious abortion and granular vaginitis may be transmitted thru the medium of the male unless proper precautions are observed.

Not all cows showing granular vaginitis abort. Heifers pregnant for the first time are more liable to abort than during subsequent periods of gestation, and should be carefully watched and vigorously treated if abortion exists in the herd.

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Quick Shipments from New York, Chicago and Kansas City (3)

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The only feed that's guaranteed to produce more milk and keep your cows in better condition.
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Poultry

NATURAL AND ARTIFICIAL INCUBATION

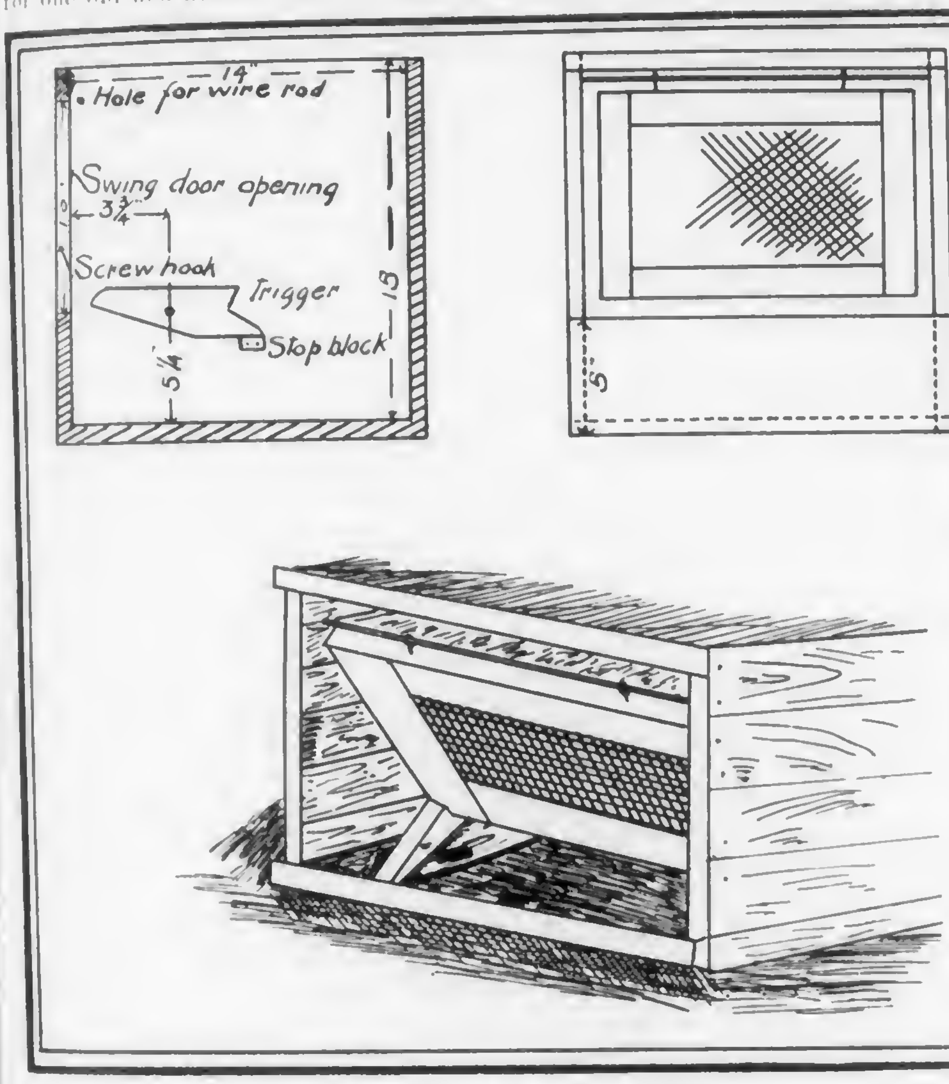
There is no doubt but that when large hatches are desired the incubator way is the only way. And then, when thousands of chicks are to be raised, there is no doubt that the brooder is the only way. The fact that hundreds and thousands of chickens are raised successfully every year, and the chickens thus raised by artificial means are strong and healthy, is a strong argument for artificial incubation.

If the hen is used to hatch and rear your chicks, she should never be allowed to care for more than 20 chicks, and that is most too many unless it be during the hot months. Outside brooders can rear 50, and some breeders even place 75 or 100 chicks in an outside brooder; but I think that more than 50 in one brooder is too many. There is no more labor involved in caring for a brooder with 50 chicks than it is to care for one old hen and 20 chicks. When a sudden shower comes up it is just as much work to drive the old hen and chicks under shelter as the 50. It does not take any more time to clean a brooder than it does a brood coop.

A brooder should be built for the convenience of the operator, as well as the comfort of the chicks, and they should be so constructed as to be well ventilated, lighted and easily and safely heated. Heat the brooder up a day or two before you want to put the chicks in it, cover the floor of the nursery with some fine sand, then sprinkle fine hay seed, cut clover or any good scratching material that you have at hand, and your brooder is ready for the chicks. Sprinkle a little chick feed and oatmeal in the litter, and it will surprise you how the little fellows will grow. Give the chicks plenty of fresh water in some kind of a fount so that they will not run thru it and foul it. See that you have small grit in the brooder, unless your chick feed has grit in it, and then a little more will do no harm, for they will not eat any more of it than they want. One of the main points is to keep your brooder clean, cleaning it every day if possible, and give it a good airing each time. It will be necessary, of course, to trim the wick every day for best results.

As I have mentioned before, don't crowd the chicks in the brooder with 75 or 100 chicks and expect them to do well. I don't believe there is a brooder built that should accommodate more than 50 chicks. In regard to the temperature of running a brooder, I have found that you have to make allowance sometimes and use your own judgment as to heat. If you have a strong lot of chicks, you will find they will not require so much heat as a hatch not blessed with that stout, rugged appearance, and will find that brooder manufacturers give directions for heating, but in case you see your little fellows crouching and huddling in the brooder, you will be safe in running the heat a little higher than the directions call for. At night when you find the little chicks with their heads sticking out under the felt of the hover, you may rest content that your heat is pretty nearly right, whether it be 90 degrees or more.

There are many who still believe that chicks raised by the natural means will develop much better than brooder raised chicks, but I have failed to notice any difference. There are certainly good points and qualities in either method. Let the beginner start with the old hen, and then, after he gains experience, he can take a try with the incubator and brooder. As he gains experience, he can branch out and then solve the problem for himself and his own personal satisfaction. But artificial brooding and incubation have come to stay.—A. E. Vandervort, Delaware Co., N. Y.



AN EASILY MADE TRAP NEST.

THE AVERAGE FARM FLOCK

If there is any one thing more than another that helps the American farmer, it is the hen. That miserable old nuisance that has been stoned and "cussed" more than anything on the place. Yet, on the other hand, is there one other thing that we find so little appreciated, so greatly neglected! In traveling from Maine to the Mississippi River, I could not help but see the same signs of neglect on every side. Still in the past 10 years this has changed rapidly and in many communities the care is given that it as a money-making enterprise merits. One condition that has come out of, or with, this change in poultry sentiment in the last decade is the predominance of the fancy over the utility side. This is being realized by many and the pendulum is swinging rapidly the other way. Today we are beginning to judge a hen, not by her fine dress, but by her ability to make good in meat and eggs. This is as it should be. We do not judge a man by his fine clothing, but by his power to make good.

There has lately been much discussion in some journals as to the actual value of the average farm flock. I had an empty house this fall, and as a good opportunity came to buy just such a flock, I did so. I will keep an exact record of feed and eggs for some time, depending on how they do. At the request of our editors, I am sending a monthly report as to the results. Let one thing be understood in the beginning, it will be the truth, no matter how bad it looks. It may create some criticism, but no matter. I am sure that many of the farm flock do not do nearly what is claimed for them. One man asked me some time ago about our hens and I told him. I then kindly asked him how theirs were doing, as I knew that was what he wanted to tell. "Oh, they are doing fine; they always do good in winter. Why, the other winter they gave us from five to eight dozen each day the entire winter." After talking a little while, I asked innocently, "How many hens did you say you had two years ago?" "About 50 or 60." Just look at his figures. I asked him if he could give me some hatching eggs this spring, and he thought he could.

On December 11th I put 80 of the best hens and pullets in a house 12x20 feet, without any males. They receive the same care as my Leghorns, which I shall tell about later. The flock is made up of all breeds, or rather colors, one-half hens and the remainder pullets, 20 of which are undeveloped. I understand they were handled roughly in being caught by a dog; this was against them. But they looked well and I really expected at least 25 eggs a day after they were acclimated.

I submit the December and January report below:

Dec. 11-31, 145 eggs laid, at 32c...	$3.87
Feed, including amount in hopper.	3.26
	.61
Jan., 1913, 217 doz. at 24½c......	$5.33
Feed	5.00
	.33

Comments are unnecessary.—Clayton F. Weaver, York Co., Pa.

Note.—We believe that Mr. Weaver's account is applicable to many farms. We would like to hear from more of our poultry readers on this subject, giving figures showing just what their flocks are doing. If it is true that such results as above stated are general, it is time for greater activities in poultry matters.—The Editors.

TRAP NESTS

There is one great source of loss to the live stock man, whether he keeps poultry, cows, sheep or any other animal, and that is the failure to discard the weak and keep the strong. On the most profitable and modern farms systems have been devised whereby the drones and unproductive animals can be weeded out; but unfortunately on the majority of our farms the poor stock is eating up the profits of the good. This is especially true with the general farm poultry flock; no effort is made to determine which of the birds are paying their way and which are simply hangers on. Here is where a great many farmers lose money, and the failure to isolate the paying birds is not only a loss of money, but it also means chicks of uncertain value next year.

Trap nests have been known and used for a great many years, but today very few farmers have them, probably because so many of them are complicated affairs, requiring more time and patience to operate than most farmers want to give. There are some, however, that are very simple. The illustrations on this page show such a one. Any farmer could build these trap nests in a short time and their earnings will more than pay for themselves the first year. The first illustration is a detail view of one side, showing the shape and placement of the trigger and general dimensions. The second, shows the front view with door and rod in place, and the lower cut is a complete nest set for the hen. As the hen enters she is forced to raise the door far enough to let the trigger drop back on the block, thus allowing the door to swing back and close the opening. There is nothing complicated here to get out of order, and very little time is needed in setting the nests.

Some system is needed in order to make the nests highly efficient. Probably the best one is to band every hen with a number on the band. A card is fastened above each nest, and every morning the number of the hen in the nest is recorded on the card. These cards then will show just which hens have been paying their board and which should go into the pot. A few months' trial of this system will demonstrate its value and increase the profits of the poultry yard wonderfully.

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Philadelphia, Pa., March 15, 1913

BUSINESS AND ADVERTISING

It is very common nowadays to hear city people speak of the farmer businessman—an expression that is founded on fact. The business of farming has developed to such proportions that the progressive farmer is constantly on the lookout for new ways to do things, and economies of operation as expressed in modern labor-saving machinery.

The farm paper is the trade paper of the farmer businessman, and it is edited with an ever-present spirit of helpfulness to its farm readers. The primary aim of every article that appears in Pennsylvania Farmer is to give its readers suggestions and news items that will be of value to them in their business life; and we are sure that this is true of standard farm papers everywhere.

The progressive business man, on the farm as well as in the city, is a believer in clean advertising. He regards it as a market place where he can inspect such machinery, commodities and necessities as are helpful to his progress and comfort. We conscientiously commend every advertisement in every issue of Pennsylvania Farmer as worthy of the careful consideration of every reader. There may be announcements of some things you can not use or do not use now, but which you will be glad to know of later on. Make a note of these as you read each issue, and refer to them from time to time.

And when you buy at the stores in town, you will find it to your advantage to insist on having such products as are advertised. The manufacturer stands back of such goods with his guarantee. You are availing yourself of a very definite protection when you buy only such goods as are sold under the manufacturer's branded name, whether you buy from your local dealer or by mail. That is a point worth remembering. The reason is that the manufacturer who is building up a business on a name or a trade mark can not afford to have a dissatisfied customer. He pays money in advertising to secure trade. He can not afford to have you dissatisfied and thus destroy the value of his advertising.

THE SECRETARY OF AGRICULTURE

Perhaps no appointment in the new President's cabinet occasioned the surprise that met the naming of David F. Houston for Secretary of Agriculture. So many demands had been made upon President Wilson to name for this office a man that was in close personal touch with farming conditions that the public seemed to have taken it for granted that these demands would be met. In all of the speculation which preceded the appointment, only men now closely allied with agriculture, either professionally or in college or organization work, were mentioned. The fact that none of the candidates thus mentioned were selected was both a disappointment and a surprise. Comparatively few people actively interested in agriculture, apparently, know of Mr. Houston or his work. The new Secretary is 47 years old; was born in Monroe County, South Carolina; is a graduate of the South Carolina University, and received the A. M. degree at Harvard in 1892, specializing in political science, economics and history. He was professor of political science in the University of Texas and was later dean of the faculty of that institution, leaving there to become president of the Texas Agricultural and Mechanical College in 1902. He was thus in touch with agricultural college work for three years, until 1905, when he was elected president of the University of Texas. He left that position in 1908 to become president of the Washington University at St. Louis, Mo. He is said to be a remarkably clear thinker, with rare administrative gifts and a charming personality. There appears to be nothing in this record or these qualifications to indicate that he will take up his duties with any preconceived agricultural hobbies or allegiance to the agricultural interests of any class or section. This may be to his advantage. His academic training and experience should have given him a broad perspective of the needs of the country, including agriculture. His department is now branching out from an industrial bureau to a broad supervisory head of the greatest single industry in the country. It has made great progress in the past 10 years, but this was merely preliminary to greater possible achievement in the next decade. There are large and important problems facing the new Secretary. His academic training may have been just what was needed to enable him to handle them from a wise, impartial standpoint. Many people believe that a personal acquaintance with the farm conditions and agricultural needs of the country is necessary to the best understanding and best handling of these problems. President Wilson evidently thought otherwise. Mr Houston must prove the wisdom of his chief's choice.

FARM BUREAUS

The following letter is typical of the attitude taken by close students in agricultural affairs on the question of state and federal aid to farmers:

"I want to congratulate you for your editorial in Pennsylvania Farmer of February 22, entitled 'Helping the Farmers.' I believe that you hit the nail squarely on the head, and that the paternalism of the government, boards of trade, etc., is doing more harm than good for genuine agricultural progress. It was my duty last week to go before a county board of supervisors to plead for an appropriation for the establishment of a Farm Bureau. I did so with considerable hesitation, not because I do not believe in the farm bureau idea, but because I feel that the call for the farm bureau should come from the farmers themselves, rather than from the boards of trade or other city agencies; and also that they should be in charge of an association of farmers who are responsible for the work of the bureaus and who contribute something toward their financial support.—Prof. W. J. Wright, Director Alfred University, N. Y."

No one doubts the value or the legitimate field of the farm bureaus, rural credit systems, country church development, etc. They are all of vital importance to country life. But will the farmer profit by them until he feels the need of them and is prepared to take them at their full value? Feeling the need, he will be the first to demand their service, and will give them his financial support and will use them to further the ends and assist in the problems which he himself understands better than any progress league or city "uplift" enthusiast. The farm bureau is here to stay. It is the step needed to bring the results of years of experimentation and agricultural research right down to the farms. Under intelligent management the bureaus will find innumerable ways of making themselves useful and of real profit to the farmers. But their success will depend to a great extent upon the intelligent co-operation between the agents and the farmers, and this condition is not developed without time, and can never be forced by outside agencies. There is a demand for the bureaus now where they are understood and where the farmers are ready for them. When these bureaus have had the time and opportunity to prove themselves and demonstrate their usefulness there will be demands for them in other counties, and the general service will be extended and improved as the demand increases. But the would-be friends of agriculture will be rendering a greater service if they will permit this movement to make a natural growth and not attempt to force it upon communities that are not ready to make full use of it.

TREE PLANTING

A man in New Jersey recently sold a farm for $6,500. Six years ago the best offer he could get was $5,000. Without looking into the situation it might be inferred that land has advanced in his neighborhood during the last six years, or that the owner of this farm had spent a large amount of money in improvements. The fact is that farms in that neighborhood have depreciated rather than advanced, and many are offered for sale at a price below the value of the buildings. Furthermore, this man has not painted his house or barns, he has not built new fences, or improved the fertility of his fields, but he has planted trees. Six years ago he bought some ornamental trees, for which he paid $58. It took him about one-half day to plant these and a few days ago he sold them for $1,500. This is not an exceptional case, for many such are at hand. Any farm agency would rather have a farm made attractive by judicious tree planting than one devoid of this advantage. But in the face of this knowledge the fact remains that comparatively little planting is being done in the country today aside from orchard setting. One farmer told us some time ago that it was too great a risk to plant trees when insect and fungous troubles were so numerous. This certainly is a factor to be considered, but it is not a serious one. Every farmer must spray to maintain the vigor of his fruit trees and other crops, and time necessary to spray a few additional trees twice a year presents such a small objection that it is no obstacle. The value derived from the ornamental trees justifies thoro care of them, which means at most about two sprayings each year. The work started by the New York State College of Forestry is an excellent one, and similar steps should be taken in other states. Every high school and preparatory school in New York State can obtain illustrated lectures on the planting and care of trees, given by one of the college experts. The school simply has to signify its desire for such a lecture. Every school child should learn the value of a tree and how to care for it, and any system which has this as its object is well worth adopting. A very few dollars expended on each farm would not only increase the monetary value of the farm, but it would make it a better place on which to live. The school is the place to begin this educational work: not only the high schools, but every school in the country. In a few years the results of such an effort would be visible along every roadside in the farming districts of our state. The instruction should not be confined to mere class work, but should include practical work in the school yard and on adjoining grounds. How to plant, prune and care for a tree and what kinds of trees are available for farm home planting should be thoroly put before each student in such a way that he could apply the information upon his father's farm. This, of course, it not a new idea, it having been advocated for some time. But the objection of too great an expense usually held against its adoption is not, or should not, be a serious one. The instruction need not be technical, requiring scientists to give it; on the other hand, better results would be obtained from the regular teacher. The idea is not to go into the higher botany of plant growth, but simply to instill in the mind of the child a love and appreciation for trees and a realization of their worth.

CURING MEATS ON FARM

In the search for methods of increasing profits on the farm, it is surprising that more people are not attracted to the possibilities of selling home-cured meats. At present prices of pork, there is good profit in intelligent feeding of hogs, and the comparative few farmers who are feeding good hogs well may be satisfied with their returns. But there is still the possibility of increasing these profits and at the same time avoiding selling the product thru the expensive middleman system, by curing the meats at home and selling direct to consumers. There are a number of highly successful farms scattered over the country that have found it possible, thru extensive advertising, to develop a big demand for home-cured ham and bacon that takes all that can be supplied at very fancy prices. The example of these is very interesting merely as showing the possibilities, but as they have put rather large sums of money into advertising and equipment to put out the very highest class products, few farmers care to follow them. But they represent the hight of the possibility, and there is plenty of room on a more conservative scale for all who care to give the business a little extra time and attention, and the returns will pay well for such trouble. At the present time a 250-lb. hog will bring in the neighborhood of 10 cents per pound, dressed. He should dress about 200 pounds, which would yield $20 for the carcass, probably a nice profit on the feed consumed and certainly a princely sum in comparison with the return a few years ago when dressed pork was high at 4½ or 5 cents. But it is estimated that a 250-lb. hog will yield 35 pounds of ham, 30 pounds of shoulder, 25 pounds of thick sides, 21 pounds of thin sides, 30 pounds of lard, 40 pounds of spare rib, head, feet and backbone, and 18 pounds of sausage. Based on present minimum wholesale prices per grade the return from such a carcass in cured meat would be about as follows: 35 pounds ham at 16½ cents, $5.75; 30 pounds of shoulder at 12 cents, $3.60; 25 pounds of thick sides cured as bacon at 18 cents, $4.50; 21 pounds of thin sides as pickled pork at 13½ cents, $2.83; 30 pounds of lard at 11½ cents, $3.45; 18 pounds of sausage at 14 cents, $2.52; 40 pounds of spare rib, head, feet and backbone, priced low at 12 cents, $4.80. This makes a total of $27.45 for the carcass, or $7.45 for curing the meats, even when selling the products at wholesale. But such home-cured meats need not be sold at wholesale. A little judicious business management will secure private customers for all such products in near-by cities or small towns at retail prices or better. Present retail prices on the classes named average about 18 percent above whole sale prices in the poorer markets in Philadelphia, up to 30 percent above for the best markets. The lower markets would thus give the producer $32.40 for the carcass, and the best markets $35.68 for what the producer is now receiving $20. Here is a chance to increase the return from the farm at a small outlay of capital and by utilizing the spare hours during the winter months. The profits can be made large or small according to the time and skill given it by the operator. The article on curing meats in this issue gives the fundamental facts necessary in starting such a practice. Improvement and enlargement of these formulas and recipes will come as the business develops.

THE HOME PAPER

Pennsylvania Farmer does not try to cover the entire country, but instead devotes its entire attention to the home field. It's better for the practical farmer upon that account. We want to reach the rest of the good farmers in this field. Will you help us by telling your friends that for only 25 cents we will send our paper every week until January 1, 1914? You will find a subscription blank in your paper this week.

PENNSYLVANIA LEGISLATIVE NEWS

New Agricultural Bureaus.—Examination of the general appropriation bill as tentatively drafted shows that two new bureaus, those of statistics and poultry are provided for, and that the appropriation for the various branches of the department are on the most liberal scale ever known. It is doubtful if the present outline can stand the strain of reductions, but there is a disposition to deal liberally with agricultural interests. The total of the appropriation for the agricultural department, including the dairy and food divisions' appropriations of $199,500, amounts to $564,400, which is much beyond that of two years ago.

The Appropriations.—The appropriations for the new bureaus are $40,000 for two years, or $20,000 a year for "the establishment and maintenance of a bureau of statistics" and $60,000, or $30,000 a year for "the establishment and maintenance of a poultry bureau." The allowance for farmers' institutes is $55,000; for suppression of tree pests, $160,000; State Board of Agriculture, $2,500; fund for special examinations, $10,000; inspection and analyses of fertilizers, $57,000; regulation of feeding stuffs, $35,000; for aid of State Horticultural Association, Pennsylvania Dairy Union, Pennsylvania Live Stock Breeders' Association, Pennsylvania State Poultry Society and Pennsylvania Bee Keepers' Association, each, $2,000; bee inspection, $3,000; linseed oil inspection, $10,000; paris green inspection, $7,000, and for special instruction and field demonstration by farm counsellors, $40,000. There is also carried an appropriation of $8,500 to pay the deficit of the Keystone State Fair at Pittsburgh, in January of last year. The Dairy and Food Division salaries and other expenses remain the same, but the sum of $190,000 is asked for its work. The division produces considerably more revenue than that amount each two years.

Forestry Allowances.—There are some interesting items in the State Forestry Department's appropriation list, among them $5,000 for "examination and furnishing advisory reports to citizens of the state on shade trees" and $7,500 for similar examinations and advisory reports "on farm forestry and farm woodlots." The appropriation for purchase of additional reserves is $200,000 and for payment of taxes, $42,000. There is also carried $5,000 for the purchase of ginseng seeds and the planting of the same within the state forests. The grange and other farmer interests of the state have manifested opposition to the proposed auxiliary forest reserve bills, contending that they would enable lumber and railroad companies to hold large tracts of land at a nominal rate of taxation while timber is growing. These bills were sent back to committee in the house.

Live Stock Board Appropriation.—The allowance in the bill is close to $550,000, of which $400,000 is for the payment of indemnity for animals afflicted with disease and for carrying out inspections and quarantines, and $63,000 for meat inspection. The sum of $25,000 is allowed for production of tuberculin and other preparations and $10,000 each allowed for inspection of animals brought from other states, for suppression of rabies, and inspection of stallions. An allowance of 21,000 is made for cattle killed during the present two-year period and which the state is indebted for.

After Horse Dentists.—A pending bill would require all veterinary dentists to register with the State Board of Veterinary Medical Examiners. This branch of the profession has grown so rapidly that it is felt that registration and control is necessary. The fee for such registration, as well as for all veterinary medical and surgical practitioners is to be $5.

Supervisors in Bills.—The present session has been productive of many bills relative to township supervisers. The first class township supervisors are authorized, in some bills, to provide water supply, fire protection, building inspection, garbage collection and other things, and also to provide lighting. A bill just presented by Mr. Swartz, of Snyder County, in the house, provides that second-class township supervisors may "on the petition of the owners of a majority of the lineal feet frontage along any highway or portion thereof in any village" within the township make contracts for street lighting. The cost is to be borne by an annual tax upon the abutting properties benefited. Farm land is expressly exempted from the provisions of the proposed law, and a residence 500 feet away from a highway can not be included in the levy of this special tax

The Taxation Question.—The whole question of state taxation appears to be more or less uncertain, and it is possible that efforts will be made to defer action on the change of the corporation taxation and incorporation laws until 1915. For four years a commission has been working on this subject at a cost of about $200,000, and while acts have been drawn no one seems to be able to agree upon anything, strenuous objection being made to the proposed taxation of capital used in manufacturing and to the tax on anthracite coal. Mr. Grabe, of Butler, one of the granger members, has presented a bill to provide a levy of a one mill tax for road purposes on all personal property, capital stocks and bonds, except mortgages on real estate. The road taxes collected under the provisions of the act are to constitute a separate fund to be distributed by the State Highway Commissioner in townships in proportion to the number of miles of public roads in each township. One thing in taxation, however, which seems likely to pass is taxation of traction engines. The act of 1911 proved ineffective, but the new act is said to cure defects, and will enable such machines to be taxed as personal property by county assessors.

To Exempt Farmers.—A rather unique bill, designed to cut down the increased cost of living, has appeared from Samuel G. Scott, of Philadelphia. It relieves from hawking or peddling license requirements all farmers who sell their own produce, or who, in addition to selling the produce of his own farm, sells the produce of others to extent of not over half of his own.

Vocational Bill Under Way.—The bill adding vocational and agricultural education to the public school course of the state is well under way and will be in the senate within a short time. The passage of this bill is regarded as certain, and as soon as it is enacted appropriations to make it effective will be authorized.

Lights on Vehicles.—A bill requiring all vehicles to display lights on the roads has appeared again this year. It requires all horse-drawn vehicles to show lights from one hour after sunset to one hour before sunrise. the light is to be on the left-hand side, and is to show white in front and red behind. A $10 fine for violation is provided.

More Agricultural Education.—A bill appropriating $10,000 to establish a secondary school of agriculture at Pennsburg, to be operated as a part of Perkiomen Seminary, has been presented. It provides for courses in dairying, horticulture, animal husbandry, domestic economy and the like. The seminary is to provide buildings and land and the course is to fit pupils to enter State College.—Hamilton, Harrisburg, March 10.

NEW JERSEY FARM NEWS

Peach Prospects.—At the Experiment Station, at New Brunswick, it is asserted that many statements which have appeared in regard to the advanced condition of fruit buds and the great danger of injury to the coming season's crop are misleading, when applied to New Jersey conditions. It has been reported that some fruit growers have attempted to prevent the early blooming of their trees by the application of ice to the tree roots. If these reports are true, says the experiment station's statement, such growers are wasting their money and efforts, because the chilling or actual freezing of the roots will not prevent the development of buds if the surrounding air conditions are warm enough to promote growth. Examination of peach buds show a small percentage of injured buds upon weak trees and tender varieties, but this is not sufficient to affect the crop. The buds have already successfully resisted temperatures as low as 9 and 10 degrees Fahrenheit since the warm days of January, and it seems unlikely that lower temperatures than this will now occur within the state. The only danger now lies in abnormally warm weather, which may cause the buds to bloom unusually early and be exposed to frost. The time for spraying the trees with lime-sulfur to control the scale and leaf curl will be at hand as soon as temperatures are above freezing thruout the day. Peach growers should add milk of lime to their lime-sulfur mixture, to make the twigs and branches of the trees white, as this may retard blooming somewhat.

Crusade Against Signs.—Farmers of this state have started a crusade against signs, especially those on trees, which make convenient harboring places for insect pests that are the plague of farmers, the gardeners, and the fruit growers. Many farmers, without being aware of it, are storing up heaps of trouble for themselves by allowing companies to place signs of this character on their properties. Protected from poison sprays and from birds, the insect pests spend the winter in a safe, warm place behind the signs. More than that, the nail holes and the dampness make it easy for the insects to eat their way into the wood and cause trees to decay. It is hoped to get a law that will go to the root of the matter. The company whose goods are advertised, and not the man who puts the signs up, should be fined. This would make it too expensive to be worth while to put up signs that affront the eye and provide winter quarters for the hibernating pests.

More Farm Bureau Plans.—By means of concrete demonstration work, J. H. Hankinson, the expert of the Mercer county Farm Bureau, has planned a movement which is calculated to be of great help and assistance to farmers. He will be assisted by a number of wide-awake farmers. The plan is as follows:

First.—Demonstration to show the value of correcting acid soil conditions. Two acres, one limed at the rate of 15 bushels of stone lime properly slaked and evenly spread, or at the rate of 2,000 pounds of finely ground limestone. It is recommended that this lime be spread before the spring work begins, on sod or grain fields which will not be plowed this year.

Second—Demonstration to show the value of inoculating red clover with nitrogen-gathering bacteria Two acres, one acre in which the seed has been inoculated and sown on the ground as soon as the ground has cracked open, and harrowed in with a light harrow. One acre not inoculated, as a check.

Third—Demonstration to show the value of top dressing sod, largely grass. One acre top dressed with a fertilizer formula containing 900 pounds nitrate of soda, 900 pounds acid phosphate, preferably 16 per cent., and 200 pounds nitrate of potash. This fertilizer should be applied with a drill or by hand as soon as it is possible to get on the ground in the spring, at the rate of 300 pounds per acre. This mixture will not work thru a drill if it is allowed to stand after mixing, unless dryer is added.

Menhaden Fishermen Get Ready The menhaden fishermen in the seacoast towns of the state are getting ready for their business, which begins about the first of April. The oil is, of course, the principal purpose of the industry, and the scrap is still a by-product, altho it is one of the most important fertilizing elements entering into our farming operations. It is used as top dressing, side dressing and as a constituent of home-made fertilizers. The whole menhaden fish, either applied directly to the land or composted with barnyard manure or woods' litter, has been used as a fertilizer along the Atlantic Coast since early colonial times. But this is a wasteful and ultimately injurious process if continuously applied, because the oil is not only lost but in time injures the soil, causing it to become stiff, gummy and sour.

Poultry Notes.—The directors of the Ocean County Poultry Association have adopted a good plan. They offer a reward of $25 for information leading to the conviction of any chicken thief stealing from their members. More caponizing will be done this year than ever before. The reason for this is the success of those who have done so and a few of whose experiences I give: Elmer E. Pothemus had 145 capons that averaged 9¼ pounds each and sold at 27 cents a pound. That has been about the average net price. Holmes Wikoff sold 114 birds for $298.51. Thomas Martin raised 36 that averaged 10¼ pounds; Farman Wetherill, 42 that averaged 10 pounds; Joseph Waln, 100 of nearly 9 pounds average; William Cullen, 2 lots of 9 pounders, and Albert Van Hise, a number almost as heavy. Daniel M. Hendrickson drove to market with a little market load of 9½ pound birds and took home $275 with him.

New Lecture Plan.—Members of the faculty of the State Agricultural College have hit upon a novel plan of imparting advanced scientific knowledge to our young men and women. They are giving a series of lectures before the students of the high schools of the state. Among those engaged in the work are President Demarest, of the college; Director Lipman, of the experiment station, and Professor Agee, chief of the extension department.

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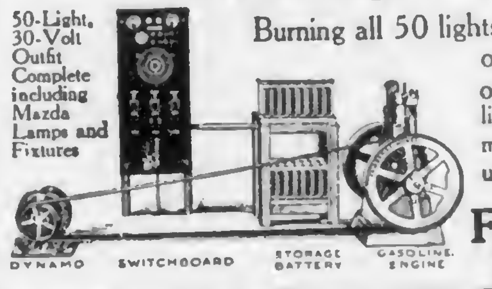

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Grange

This department is conducted by R. P. Kester, Lecturer of Pennsylvania State Grange. Notes, queries, comments and news of grange work are invited from readers. Obituary notes and news of purely local interest can not be used. Address all communications for this department to R. P. Kester, Grampian, Pa.

GRANGE WORK IN CARBON AND LEHIGH COUNTIES

Grange work in Pennsylvania was active during February. The writer had the pleasure of organizing a grange at Big Creek, Carbon County, one at Macungie and one at Laury's Station, Lehigh County. The new organizations were largely the result of work done at farmers' institutes.

The writer spoke on co-operation, February 4, in the church at Big Creek. At the close of the session for the afternoon, three ladies came to him and wanted to know more about the grange and the co-operative system of buying and selling, recently inaugurated under the name of the Keystone Grange Exchange. They stated that they felt the need of an organization like the grange in their vicinity, and would like to know what steps should be taken to get one. The object and benefits of the grange were briefly explained, and plans made for an organization at that point. At the close of the evening session it was announced that 23 names had been secured for an organization, and that they would meet the Worthy Overseer at the church the next morning. Instead of 23, however, there were 40 present the next morning, and all took part in the organization of the new grange. On February 17 a second meeting was held, and eleven more names received, making a total charter list of 51.

The new organization was named Big Creek Grange. Chester Snyder was elected Master; Orlando Solt, Lecturer and Jos. H. Driesbach, Secretary. The ladies of Big Creek were largely responsible for this new grange, as they took the initiative and were active in getting the men interested in the work. They have a splendid organization, one that will be a credit to the order and to Carbon County.

The second grange was organized at Macungie, February 21. This grange was the outgrowth of a farmers' institute held at Allburtis the previous week. Co-operation was the subject that most interested the farmers. They listened intently to the writer's remarks, and then plied him with questions for nearly an hour. Wm. S. Weaver was appointed to interview the farmers and find out how many would assist in the organization of a new grange. The names were secured, and the meeting held, with results as above stated. H. K. Fowler was elected Master, Wm. S. Weaver, Lecturer and Wm. Lichtenwalner, Secretary. The grange was named Macungie, and starts in with a membership of 20. A second meeting will be held March 15, when more names will be received.

On Tuesday night, February 25, the third grange was organized at Laury's Station, with 25 charter members. The new grange was christened Laurys. George Eichles was elected Master, Oscar Yehl, Lecturer and C. B. Satler, Secretary. Here again the work of the farmers' institute paved the way for a new grange. P. S. Fenstermaker, County Chairman of Institutes, became a charter member of the Macungie Grange, and was the moving spirit in securing both organizations. These new granges are well officered, the leading offices being filled with young men full of vim and energy.

The farmers of the east central portion of Pennsylvania are largely of German descent, better known as "Pennsylvania Dutch." As a class, they are more conservative and not so easily organized as the farmers of northern and western Pennsylvania; but what they lack in the initiative they make up for in determination and staying qualities. It has been well said, "That a Pennsylvania Dutchman could smell soil underlaid with limestone 40 miles." Be that as it may, he got it, and by his thrift and energy he has kept it. We welcome his advent into our order, and we know that the grange will not only benefit him and his family, but that he, in time will strengthen our order.

Like the coming of the dawn following an Arctic night, the farmers are beginning to realize that if they are to enjoy an era of "Rural Uplift," it must come thru their own efforts and not from those in other walks of life, who have so suddenly discovered him and his "deplorable" (?) condition. What he most needs is not sympathy, but a fair chance and equal opportunities. Given these, he will get along fairly well without the professed friendship of those who have so suddenly become interested in his welfare. In other words, if the farmer is to shake off the parasites which have fastened themselves upon him and his products, he must do it himself, and not depend upon the uncertain pledges of politicians and parties, nor the so-called "Friendly Interests." This can only be done thru intelligent, systematic and complete organization and co-operation. Cheapen the cost of distribution from the farm to the consumer, from the factory to the farm, and you will not only be able to reduce the cost of living, but you will have done something that shall have a greater effect upon the future success of agriculture, that of making life upon the farm and in the home more attractive and more remunerative.—E. B. Dorsett, Overseer Pennsylvania State Grange.

DEVELOPING A COMMUNITY SPIRIT

An essential thing in the work of improving rural conditions is concerted action by those living in the community. There must be a common recognition of the needs and a willingness to co-operate with each other in the endeavor to improve; in other words, there must be created a community spirit—a sense of loyalty and duty to the community, a willingness to serve and be served. All this is but another and a longer way of expressing the old aphorism, "United we stand, divided we fall."

The isolation of the farmer is frequently given as the cause of his individualistic temperment. This is not wholly true. The pioneer farmers were far more isolated, yet they had, of necessity, far more community spirit of a certain kind. Not having machinery, their work was largely done by man power. Frequently the neighborhood for miles around would meet together and do the work on the farms in turn by what they called "frolics"—house buildings, barn raisings, log-rollings, grain-cuttings, apple-cuttings, quiltings, etc., being among the occasions that brought them together, and the family that would not take part in these "frolics" was soon ostracised by common consent. But with the advent of machinery the farmer became more or less independent of the help of his neighbor, and the opportunity for mingling with his neighbor became less frequent, and it was then that the real community spirit began to wane.

The practice which followed in many places—for man is by nature gregarious—of meeting in the evenings and on wet days in the blacksmith shops and around the corner grocery store did not and can not serve the purpose, for the purpose of such meetings is to loaf and not to do some useful and helpful thing. More than that, it is men alone who meet and not the whole family. The community spirit must be revived and increased if we would advance agriculture and improve rural conditions, for let us keep this in mind: the community must be the unit in view, not the individual farmer or his farm.

How can this be developed? By regular stated meetings of the people of the neighborhood who come together for some definite purpose, and to become better acquainted with each other. Boarding the trolley car or loading up the automobile and going into town and attending the functions there is right to a limited extent, but this will not fully meet the needs of rural life nor remedy the defects, and far less will it tend to build up the community spirit. Meetings of the farmers, for the farmers and by the farmers and their families are necessary. Not only the residents of a given community need to have a common purpose, but there must exist a sympathy and understanding between all similar communities of the nation.

What is the answer? The grange affords the opportunity and the medium. It is the ideal organization to meet the needs. It has the principles, it has the age, it has the extent. Why not join? Or if you are a nominal member, why not get busy?—R. P. Kester.

McSPARRAN'S GRANGE NOTES

The Re-appointed Highway Chief

The appointment of Mr. Bigelow to continue as head of the Highway Department of our state is not in line with what many of us had begun to feel, viz, that Pennsylvania had at last wakened up to view public affairs as intended to be for the welfare of the people. There was a long time in Pennsylvania when no one would have expected a lucrative appointment to be filled on any other basis than the value the appointment would have to the machine. If there were special fitness or ability, they were merely a pleasing coincidence.

We had hoped that day were past. There were such loud protestations of Progressiveness all over the state last fall that it seemed as tho one were justified in thinking that a better day had dawned, and really we think it has. But across the eastern horizon of our political sky has fallen a dark cloud that covers and dims the shining of that sun of progress that seemed struggling upward. We hope that such a wind of protest will fill the political atmosphere as will drive back the influence of such a cloud and that thereby a stronger determination to have public affairs conducted in the interest of the people will appear.

There was absolutely no excuse for this appointment, except possibly the hope of building around that department a new political machine which, under possibly new leadership, would continue to grind down the people of Pennsylvania for the benefit of special interests. Mr. Bigelow was entirely unfit. If he had been entering the office as a new man, it might be argued that he should not be condemned until tried. But he has been tried, and instead of being "found wanting," he has not been found at all. There is not a phase of the work that is in commendable condition. The roads he is making are a failure. Their cost is an outrage. No general plan has been devised to better the condition of all the roads of the state.

No bulletin of instructions has been issued, giving the supervisors of the state the benefit of the latest plans and methods of dragging, draining and bridge construction as they have been worked out successfully in places thruout the country. No report of the work done by the department has been issued for about three years. Information that they claim they have tabulated is withheld, even from a citizen who goes to them and asks for definite items of information. Bids are accepted for the building of roads, and then in so many cases (too many to be excusable) extras are allowed which decidedly enhance the cost of construction.

But what use to multiply examples. If we had no highway department we might get at least the pittance that the state promised the townships which voted a cash tax, but now, with our $600,000-a-year Department to care for these matters, the state is not paying its honest debts, and it begins to look as tho these back debts never would be paid. It is bad enough for the state to squander the people's money by reckless appropriations, but worse yet to withhold an appropriation explicitly called for and stipulated in the law of the state, thus making us all parties to a fraud. While on the other hand, they ask for the bonding of the state for their schemes, so that coming generations may share with us the burdens of their astounding inefficiency.

One thing remains to be done, and that is to arouse such a sentiment as will prevent the financial catastrophe represented in the issuing of bonds for ordinary improvements. Of one thing we can rest assured, and that is that if the people of this state give to a department of state government, run as this one is, the expenditure of such a vast sum as $50,000,000, they can only expect to have built out of it not improved roads but an improved political machine warranted to stand the strain of any ordinary reform upheaval in the interest of the people.

It has been openly charged in the public press that Mr. Bigelow has a bad record as to his honesty. Upon this point we have not studied the evidence, and therefore pass no opinion. But when he ducked the public challenge of the legislative committee of the State Grange to debate the bond issue, he proved his lack of conviction as to the rightness of the proposition; and the conduct of the department ever since he took it proves his lack of ability to properly serve the people in such a position.—John A. McSparran.

NEED FOR THE INDEPENDENT FARMER

The organization of farmers, the formation of credit societies, the development of a safe and sane method of financing agriculture and the farmers' business is a matter for earnest concern, not only for the individual farmer nor the farmers as a class only, but for the whole nation. The existence of the individual farmer, the man owning his own farm, must be maintained if the country is to continue a land of the free.

No one disputes the fact that the manhood, the patriotism, the level-headed, constructive statesmanship of the country has largely been bred and developed in the environment of the independent farmer's home—an institution that must not pass out of existence.

The immense fortunes of our country have been made, in the main, by men gaining control, at a nominal price, of the natural resources of the nation. Capital was always ready to finance operations monopolistic in character. Coal, iron, oil, lumber, gas—all these and more have been monopolized and exploited and untold wealth accumulated. This was rapid and easy because in the rapid development of our country these products were in great demand.

Land was cheap and plentiful. Its products equaled and exceeded the demand. The number of producers was greater in proportion than the number of consumers, a condition of affairs that favored the monopolists. The big wages they could afford to pay attracted many millions of immigrants—consumers of food and clothing—until now the number of consumers so far exceeds the number of producers that we have the problem of the high cost of living before us, and a demand for food almost exceeding the supply.

This condition makes farming, if properly financed and managed, a profitable business, and capital is beginning to prick up its ears and look towards the soil as another resource capable of returning dividends. In fact, investment has already begun in some places. In one of the rich valleys of Pennsylvania one man owns more than 100 farms. Large holdings are also increasing in parts of the South and the West. If the time ever comes when the agricultural land of this nation is owned by landlords and worked by peasant farmers, that time will see the end of free American institutions. R. P. Kester.

TIME FOR ORGANIZATION

This is a good time of year for deputies and other qualified members of the grange to get busy in organizing new granges. Many localities are ripe for organization, if some one will only do the necessary preliminary work. This is best done by first doing some personal work in the neighborhood, and talking to some of the leading men and women and arousing their interest. Then call a public meeting and explain fully the purposes and principles. Where religious scruples are held, make it clear that nothing whatever in the principles or work of the grange will do violence to the religious belief of anyone. The grange teaching is based on the fundamentals of a broad religion. The social and educational help to the community should be made plain. To those who are looking for financial and business profit, no better opportunity can be found than what the grange has done and is proposing to do in that line. What will you do to extend the order?—R. P. K.

THE HOME PAPER

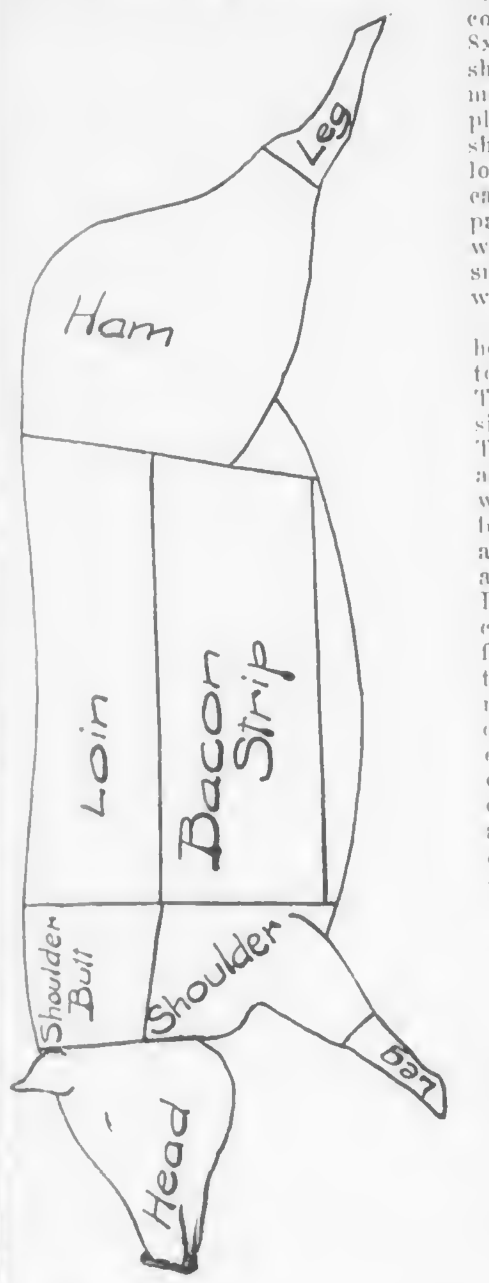
Pennsylvania Farmer does not try to cover the entire country, but instead devotes its entire attention to the home field. It's better for the practical farmer upon that account. We want to reach the rest of the good farmers in this field. Will you help us by telling your friends that for only 25 cents we will send our paper every week until January 1, 1914? You will find a subscription blank in your paper this week.

COUNTRY CURED HAM AND BACON

(Continued from page 1.)

which the side is flattened with a cleaver or flat instrument of some kind, and all edges trimmed up square.

Curing Methods.—There are several standard recipes for curing pork which seem to give general satisfaction. Some prefer to dry cure their meat, while others give preference to brine curing; however, brine curing is generally considered the most convenient and successful for farmers' use. It requires little or no attention after the meat has been put in it, and thus saves the extra handling which is necessary in dry curing.



SIDE OF PORK SHOWING THE CUTS.

A good, clean hardwood barrel is one of the safest vessels for curing meat. Stone jars may be used, but they are too expensive and too easily broken when handling. All pieces of meat that are to go into the curing vessel should be rubbed over the surface with clean barrel salt and put on a table or shelf for about 10 hours, to let the meat absorb the salt before it is packed. When packing the meat in the vessel, the hams and shoulders should be put on the bottom and the bacon pieces on the top.

Sugar Curing.—A common and desirable recipe for sugar-cured hams and bacon is made up as follows: Eight to 10 pounds of salt, 2 pounds of brown sugar and 2 ounces of saltpeter for every 100 pounds of meat. Dissolve this mixture in 4 gallons of boiling water, which is usually enough to cover 100 pounds of meat. Allow this to cool before it is poured over the meat in the barrel. Weight the meat down with a clean board and stone, which is to keep all parts covered by the liquid. Place the vessel in some cool place where it is left for from 6 to 7 weeks, when the meat is ready to come out of the brine to be smoked.

Smoking.—Smoking meat is an old and ancient custom which has been in use for centuries. It is probably the one phase of the meat industry that has undergone but a slight change in form and method. The prime object in smoking the meat after it has been cured is to preserve it for use during the summer and also add desirable flavor to the meat. Many artificial methods of flavoring have been advocated, and fluid extracts of one kind or another have been offered as a substitute for smoking. None of these, however, have been found satisfactory, and the old style smoke still holds its own.

When the meat is ready to be taken out of the brine, all pieces should be put in fresh water at a temperature of about 55 to 65 degrees. The meat is left to smoke for about 6 or 7 hours. The object of this soaking is to remove all the salt on the surface of the meat. If smoked without soaking or washing, this salt forms a crust on the outside, which is very objectionable after the meat is smoked. The meat should be allowed to drip well before it is hung up in the smoke-house.

A desirable smoke-house is one built of brick or cement; however, it may be built of any material. For farm use, a convenient size is one about 6x8 or 8x10, and 10 feet high. Ventilation should be provided, so that the smoke may escape from the house. Some people conceive the idea that all smoke should be held in the house and not allowed to escape, but when such is the case it becomes stale and does not impart to the meat as good a flavor as when it is allowed to pass from the smoke-house after coming in contact with the meat.

In hanging the meat in the smoke-house, no two pieces should be allowed to touch, as it means uneven smoking. The meat should be hung as high as possible so as not to be near the fire. The best fuel to use is hardwood, such as hickory, maple or any good hardwood or sawdust. Soft woods should be avoided, as they give off considerable carbon, which forms an undesirable coating on the outside of the meat. In case the hardwood is not available, corncobs make a good substitute. The fire should never be more than enough to produce a continuous smudge, so as not to give off too much heat. A light continuous smoke should be started under the meat, and kept up for a period of from 36 to 48 hours. This is long enough to smoke meat, if the fire is not allowed to die down. Meat, when properly smoked, should be of a light brown or amber color.

A HAM AND SHOULDER UNTRIMMED.

CO-OPERATIVE BREEDING OF LIVE STOCK

Co-operative breeding of live stock is a comparatively new idea in many localities. Yet it is attracting considerable attention in certain sections, and has many attractive sides. Here in Pennsylvania, where the farms are located within a short distance of each other, it should be a success. It enables a group of farmers to purchase sires of higher value and better breeding than would be possible for the majority of individuals to obtain. It interests the farmers in the community, in one or two leading breeds of stock, whether sheep, hogs, cattle or horses. A buyer will come into that locality more readily if he knows that he can buy a carload of stock without much travel, and is willing to pay a better price for the individuals that he takes out. It also unites the farmers in a body with common interests, and will lead to the betterment of the community as a whole, and to every individual.

There is not enough difference between our main breeds of live stock, as a whole, to keep the farmers from getting together on one or two breeds. After they have reached an agreement, they should organize into a club, and draw up a constitution and by-laws. They should decide upon the maximum price to be paid for the sires, and appoint a committee to purchase the animals. The cost can then be divided among the members of the club pro-rata. Some arrangement will need to be made as to the care and keeping of the animals. Often one member of the club will be willing to care for the animal in order to have him near for service. Care should be used to locate the sire as conveniently to all as possible. It may be advisable to hire a man to care for the sire and be responsible for him all the time, rather than have him handled by many different hands. The sire will give better results, on the whole, when handled by one individual.

In Europe certain localities are noted for the quality and quantity of the live stock that they produce. The success of the cattle industry there is due, in a large degree, to co-operative breeding. In our own country the breeding of Holsteins and Guernseys in districts of Wisconsin, has made these localities famous. Buyers visit these sections from all over the country, because they know that they can pick up a car of cattle without trouble. What farmers can accomplish in other states with co-operative breeding can be made successful in the state of Pennsylvania. No other state in the Union offers such rich opportunities along this line as does the Keystone State.—Geo. H. Bedell, Pennsylvania.

SCOURS IN PIGS

White scours causes the death of thousands of pigs every spring; myriads more are very much damaged by an attack. Over-feeding is the common cause, and a decided check in feed and change of kind is the usual remedy. Corn is the safest feed for the common farmer's sow the first two weeks after farrowing. It is not the ideal and theoretically correct ration, of course, but the safest.

We have found that if a small part of a teaspoonful of copperas is fed in the sow's slop once a day, the pigs are less likely to get the scours; and if the pigs already have the scours this will correct the trouble more quickly than a decrease of feed alone. If the pigs are eating, a very little copperas in the feed has proved a reliable corrective in our case. When just beginning to eat, the pigs are much less liable to take scours if their middlings are fed dry instead of sloppy.—George P. Williams, Delaware Co., Ohio.

A SPECIAL OFFER

For only 25 cents (or 5 for $1.00) we will send Pennsylvania Farmer to new readers every week until January 1, 1914. No good farmer can afford to overlook this. Will you help us by interesting your friends in this?

Waste Wood.—Bulletin 159 of the United States Department of Agriculture shows that there is now a loss of $300,000,000 per year in the waste resinous wood of the country. It places the annual waste at 8,000,000 cords left in the forest from lumbering, dead and fallen timber, stumps of cut-over lands and slabs and edgings from the mills. A cord of this wood, which costs from $2 to $4 delivered at the works, will yield products worth $18.17. These products include paper pulp, turpentine, resin oils, pine oils and wood alcohol. The bulletin is for free distribution.

Spray for Blight
It cannot be cured but can be prevented easily and at little cost, if sprayed in time and in the right way. Spraying increases the yield enough to pay.
IRON AGE Traction Sprayers
are built for this purpose 4 or 6 rows, 55 or 100 gallon, wood or steel tanks, single or double acting pumps with least slippage, wind shift adjustment, nozzle strainers, for one or two horses. Ask your dealer about them and write us for new *Free* booklet.
Farm, Garden and Orchard Tools.
BATEMAN M'F'G CO. Box 2439 Grenloch, N. J.

SWINE

THIS O.I.C. SOW WEIGHED 932 LBS. AT 23 MONTHS OLD
IONIA GIRL
I have started more breeders on the road to success than any man living. I have the largest and finest herd in the U.S. Every one an early developer, ready for the market at six months old. I want to place one hog in each community to advertise my herd. Write for my plan, "How to Make Money from Hogs." C. S. BENJAMIN, R.F.D. 3, Portland, Mich.

SUNNY BANK FARM BERKSHIRES MARCH SPECIAL. 10 Sow Pigs at $7.50; 5 Bred Gilts at $20.00; 10 Bred Sows at $25.00. Registered.
A. F. JONES, P. O. Box 117, Bridgehampton, New York

FOR SALE—Thorobred Berkshire Boar. Rivals Majestic Lee, Farrowed April 9, 1912. Inquire W. J. Gibson, Mgr. Treadway Farms, Willoughby, O.

Large Berkshire Swine. Registered High grade. Prices reasonable. Write HOME FARM, CENTER VALLEY, PA.

Five High-Classed Poland China Boars
FOR SALE, that are outstanding in quality and are from noted prize-winning ancestry; are fit to head good herds; one last fall's yearling, price $35.00. Four last March boars, price $30.00 each. For further particulars, address
C. S. EPPLEY, - ZANESVILLE, OHIO.

Large Type Poland Chinas—Service boars, sows bred to champion boars for March and April farrow. Fall pigs, either sex. Prices reasonable. L. C. McLaughlin, Pleasantville, Ohio.

Poland Chinas and Delaines. Well bred pigs and rams for sale. C. OWEN CARMAN, Box C, Trumansburg, N. Y.

POLAND CHINA—Big type service boars, yearling sows, gilts, bred for spring farrow also fall pigs. Prolific growthy smooth strain. F. A. Kinsey, Lakeville, O.

Chester Whites—Choice registered stock of both sexes of serviceable age for sale. Write your wants. J. A. Boak, Rt. 4, New Castle, Pa.

MULEFOOT HOGS
Oldest breeder in the State. Pedigreed stock for sale. SAMUEL JOHNS, Wilmington, Ohio. Sec. D.

Mule Footed Pigs For Sale. Booking orders for June delivery. Write for information. John A. Williams, Eaton, Ohio.

DUROC JERSEYS Two show boars of spring farrow by Red Col, the 900 lb. prize winner. Yearling and gilts bred, price $30 and up. All cholera immune.
V. E. MICHAEL, Veterinarian, Yellow Springs, O.

Duroc Jerseys—Champion herd at W. Va., Pa., N. J. State fairs, 1912. Booking orders for spring pigs. R. B. Martin, Stouts Mills, W. Va.

DUROCS and Poland Chinas—35 bred sows for Mar., Apr. & May. Name breed wanted. 10 service boars, pedigreed fall pigs. O. P. McDowell, Plain City, Ohio

Large Yorkshire Hogs, Fall pigs, either sex, Gilts bred or open. Service boars. R. J. Figley, East Rochester, Ohio.

DOGS

DOGS—Broken Fox Hounds, Beagles and Rabbit Hounds, Coon Hound Pups, Collie Dog 2 years old, Collie Pups, Fox Terriers, Bull Terriers, Spaniels, St. Bernard Brood Bitch, St. Bernard Dog, Great Danes. In writing say just what you want.
HARRY REEDER, - THORNDALE, PA.

MISCELLANEOUS

Adirondack Farms, Glen Falls, N. Y.
A new importation of forty head of Percheron and Belgian stallions and mares, unequalled in quality and breeding. Better horses, more power, more profit on your farm. Catalogue J, the finest ever, if interested.

JACKS and MULES
Raise mules and get rich. 18 Jack and Mule farms under one management, where can be seen 340 head fine large Jacks, Jennys and mules, 14 to 17 hands high. Good ones. Stock guaranteed. Write for prices today. Address
KREKLER'S JACK FARM
West Elkton, Ohio.
Branch barns: Clinton, Ind.

MAMMOTH MISSOURI JACKS
Also horses and mules. A fine lot of Jacks with plenty of bone. Black mealy noses. Write for prices
WM. ARMSTRONG. - WOOSTER, OHIO.

"BREED UP YOUR SHEEP"—Article sent free to any address.
PARSONS, "The Sheep Man of the East." GRAND LEDGE, Rt. 3, MICH.

2000 Ferrets. All sizes. Prices and book mailed free. N. A. KNAPP, Rochester.

Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., March 10, 1913.

The supplies of butter were well sold up and prices are good with a firm market. Under greater receipts, eggs declined 1@1½c per dozen. Dressed poultry receipts were light and prices well maintained on good grades. Fruits and vegetables were about normal.

Butter.—Western creamery, 39c; extras, 37c; firsts to seconds, 31@36½c; special prints, 43@46c; near-by prints, 40c.

Cheese.—New York full cream, 18c; skims, 11@14c, according to quality.

Eggs.—Candled, 22@24c doz.; extras, 20c. Current receipts at $5.40 per standard case.

Poultry.—Fowls, 17@18c; old roosters, 12@12½; spring chickens, 18@19c; ducks, 18@19c; pigeons, 18@25c pair; turkeys, 18@19c.

Dressed Poultry.—Western fowls, 17c; roosters, 14c; chickens, 18@19c; turkeys, 20@23c.

Vegetables.—White potatoes, choice, 70@73c bu. Onions, 20@35c bu. Cabbage, $5.00@7.00 ton. Lettuce, $1@2 basket. Cucumbers, $2.75@3.50 basket. Celery, 50@60c bch. Spinach, 80c@$1.25 bbl. Kale, 75c@$1.00 bbl. Egg plant, $1.50@2.00 box. String beans, $2.00@3.50 bu. Peas, $2@4 basket. Peppers, $1.50@2.00 carrier. Tomatoes, $1.00@1.75 carrier.

Fruit.—Apples, choice varieties, 25@75c hamper, $2.00@3.50 bbl. Cranberries, $5.00@8.50 bbl.; $1.75@2.75 crate.

Hay and Grain.—No. 1 timothy, new, $17.50@18.00; No. 2, $15.00@16.00; No. 3 do., $12.00@14.00. No grade, $8.00@10.00. Clover, mixed, No. 1, $14.00@14.50; No. 2 do., $12.00@13.00. No. 1 tangled rye straw, $13.50@14.00; No. 1 oats straw, $11.00@11.50. Shelled corn, No. 2 yellow natural, 56½@57½c; No. 3 do., 55½@56c. No. 2 red wheat, $1.01½@1.02½; No. 3 do., 96½@97½c. No. 2 white oats, 39½@40c. Standard white, 38½@39c; No. 3 white, 37½@38c.

Hides and Skins.—Steers, abattoir, 15¾@16¾c; do. country, 13¾@14¼c. Cows, abattoir, 14¾@15¼c; do. country, 13¼c. Bulls, abattoir, 12¼@12¾c; do. country, 11¼c. Calf skins, Nos. 5 to 12 and up, $1.35@2.45; do. green, 13@14c lb.

Seeds.—Timothy, $3.15@3.25 bu.; **clover, white, $25; do. crimson, $6.25; do. mammoth, $14.50; do. sweet, $13.00; do. alsike, $13.25; red top, per bu., $18.50; alfalfa, $7.00@10.00; Canada field peas, $2.35; vetch, $8.50; rye, winter, $1.35; spring, $2.25; soy beans, $3.25; barley, $2.50; buckwheat, $1.50; cowpeas, $3.00@3.25; millet, $1.90@**2.75; oats, $1.20.

Coffee.—Rio, 7s, 12¾@12½c; Santos, 4s, 14¼c. Mild Coffee—Cordova, 15@17c.

Provisions.—City beef, smoked and air dried, 22@23c. Beef hams, 31@33c. Pork, family, $21.00@22.00. Hams, cured, 14½@15½c; skinned, 14½@15½c; smoked, 17@18c. Other hams, smoked, city cured as to brand, 17@18c. Picnic shoulders, 9¾@10½c; do. smoked, 11½@12c. Bellies in pickle, 14@15½c. Breakfast bacon, as to quality, 17@22c. Lard, refined, 11¾@12½c; do. in tubs, 11½@12c; do. kettle rendered, 11¾@12c. Tallow, prime city, 6¾@7c; do. country, 7c; do. dark, 5¾c; do. cakes, 7¼c.

Sugar.—Cut loaf, $5.15 cwt.; cubes, $4.60; powdered, $4.45; granulated, $4.35; standard granulated, $4.40; crystal A, $4.35.

Flour.—For 196 lbs., in wood, winter clear, new, $4.00@4.25; do. straight, new, $4.40@4.60; favorite brands, $4.85@5.25. Rye flour, Penna., $3.50@3.65.

BALTIMORE PRODUCE

Baltimore, Md., March 10, 1913.

Butter was in good demand and firm. Under greater supply eggs declined 1c on most grades. Dressed poultry met with ready sale at about steady prices. Fruits and vegetables were steady under normal trading.

Butter.—Creamery, fancy, 36½@37c; do., choice, 35@36c; prints and blocks, 35@38c. Maryland and Penna. rolls, 20@22c; prints, 20@21c. Process, 25@27c.

Cheese.—Flat, 17½c; Daisy, 18@18½c.

Eggs.—Md. and Penna., firsts, 17c; western, 17c; southern, 16c.

Live Poultry.—Hens, 17@17½c; chickens, 17@18c; old roosters, 10@11c. Turkeys, 20@24c. Ducks, 18@20c. Geese, 14@15c. Guinea fowls, 30@45c each.

Dressed Poultry.—Turkeys, 20@25c; chickens, 18@20c; roosters, 10@11c; ducks, 17@22c; geese, 15@16c.

Vegetables.—Potatoes, white, 55@70c bu. Sweets, $2.50@3.00 bbl. Cabbage, $4.00@5.00 per ton; Danish, $8.00@9.00. Onions, 25@35c bu. Lettuce, 20@35c basket. Egg plant, $2.00@2.50 crate. Peppers, $1.25@1.75 crate. Squash, $1.50@2.00 basket. Spinach, 40@50c box. Cucumbers, $3.00@3.50 basket. Beans, green, $2.50@3.00 basket. Celery, $1.50@2.50 crate. Turnips, 15@20c box. Cauliflower, $2.50@2.75 bbl. Horseradish, $1.25@1.75 box. Beets, 25@35c bu.

Fruit.—Apples, new, $2.00@3.50 bbl., 50c@$1.00 bu. Cranberries, $8.00@9.50 bbl.

Grain.—Wheat.—No. 2 red western, $1.06¼; contract, $1.06¼. Corn, spot, 55@55¾c; contract, 54¾c. Oats, No. 2 white, 39¼@39½c; standard white, 37½@37¾c; No. 3 white, 36½@36¾c. Rye, 55@65c.

Hay and Straw.—No. 1 timothy, $18.00@18.50. No. 2 timothy, $16.00@16.50. No. 3 do., $13.00@14.50. Choice mixed, $15.00. No. 1 clover, $11.50@12.00. No. 2 do., $9.00@10.00. No. 1 tangled rye straw, $12.50@13.00. No. 1 oat straw, $9.00@10.00. No. 1 wheat straw, $8.50@9.00.

Millfeed.—Spring bran, $22.50@23.00. **Middlings, flour to white, $26.00@**28.00; western middlings, $23.50@24.00; city mills mids., $24.00@24.50.

NEW YORK PRODUCE

New York City, March 10, 1913.

The demand for butter was stronger than last week, and a stronger tone prevailed on the market. Egg prices dropped 1c under greater supplies and a scarcity of buyers. Dressed poultry continues very dull. Receipts are light and the market is without interest. Fruits and vegetables are about as last week. Potatoes have improved somewhat, but apples are in heavy receipt.

Butter.—Creamery firsts to extras, 35@37c; thirds to seconds, 31@34½c; factory, 19@24c; state dairy, 25@35c; packing stock, 18@22c; process, 21@28c.

Cheese.—Whole milk special, 18c; do., common to fancy, 16@17¾c; skims, 8@14¾c.

Eggs.—State and near-by, 20@25c; fresh gathered, 16@20c; mixed, 18½@19c; refrigerator, 11@16c.

Dressed Poultry.—Turkeys, dry, 19@24c; chickens, Penna., 18@30c; fowls, 14@17c; old roosters, 13½c; ducks, 15@20c; roasters, 15@18c.

Grain.—Easy. Wheat, No. 2 red, $1.08½; No. 1 Northern, 99¾c. Corn, 57c. Oats, standard white, 38½c.

Vegetables.—Potatoes, state, $1.75@1.80 per 165-lb. bag. Cabbage, Danish, $6.00@9.00 ton. Green beans, $1.50@3.50 basket. Carrots, $1.00@1.50 bag. Cucumbers, $1.00@2.00 dozen. Lettuce, near-by, 10@30c dozen. Squash, $1.50@2.00 bbl. Celery, $1.50@2.25 case. Horseradish, $2.00@4.00 cwt. Parsnips, 75c@$1.00 bbl. Turnips, 40@75c bbl.

Fruit.—Apples, $1.75@4.00 bbl., according to variety. Pears, 50c@$1.10 basket. Cranberries, $6.00@10.00 bbl.

YORK PRODUCE MARKET

York, Pa., March 10, 1913.

The attendance by the farmers was below the average for the week owing to very rough weather. Even buyers did not venture out. Prices remained about steady, except butter, which is in light demand.

Butter.—Country, 32@34c; separator, 33@36c. Milk, 6c per qt.

Eggs.—18@20c.

Poultry.—Hens, 12@14c. Dressed poultry, 40@80c each.

Vegetables.—Potatoes, 10c half peck; 55@60c bu.; cabbage, 2@5c each; lettuce, 5@10c; beets, 3@5c bunch, 10c per ½ pk.; radishes, 2@4c; turnips, 7@9c per ½ pk.; onions, 10c per ½ pk.; Lima beans, 12c qt.; soup beans, 10c qt.; sweet potatoes, 12@15c per ½ peck; spinach, 10c per ½ peck; parsnips, 10c per ½ peck; sauer kraut, 5@8c qt.; lard, 14@16c lb.; corn meal, 5@6c qt.

Fruit.—Apples, 10@25c a half peck; pears, 15c per ½ pk.; chestnuts, 15c qt.; walnuts, 15c per ½ pk.; strawberries, 20@25c box.

Retail Grain Market.—Wheat, $1.14; corn, 68c; oats, 50c; bran, $1.30 a cwt.; rye, 78c; **middlings, $1.55 a cwt.**

Wholesale Grain Market.—Wheat, $1.01; corn, 55c; oats, 40c; rye, 68c.

BUFFALO PRODUCE

Buffalo, N. Y., March 10, 1913.

Butter.—Active. Creamery choice, 37c.; choice dairy, 31@33c.

Cheese.—Quiet and steady. Fancy, 17½c; good, 16½@17c.

Eggs.—Steady. State, fresh, 23@24c; storage, 18@20c.

Dressed Poultry.—Quiet. Turkeys, per lb., 23@26c; fowls, fancy, 16½@18; chickens, 16@20c; old roosters, 13@14c; ducks, 21@24c; geese, 17@18c.

Live Poultry.—Easier. Chickens, 13@16c; ducks, 16@18c; geese, 14@16c; turkeys, 18@20c.

Vegetables.—Potatoes, firm. Home-grown, 65@68c bu. Cabbage, 25@75c bbl. Onions, 40@65c bu. Beans, green, $2.75@4.00 hamp. Turnips, 75@80c bbl. Celery, 50@75c doz. Lettuce, 40@70c.

Beans.—Quiet, steady. Marrow, fancy, $3.30@3.40; medium, $2.50@2.60; red kidneys, $2.75@3.00.

Fruits.—Apples, $2.50@3.25 bbl.; 50@75c bu.

Honey.—Firm. No. 1 fancy, 17c; No. 2 new, 13@15c; dark, 12c.

Hay.—Quiet. Timothy, choice, on track, $17.00@17.50; No. 2 do., $15.50@16.00; light mixed, No. 1, $13.00@14.00; rye straw, $10.00; oat and wheat straw, $9.00@9.50.

Feed.—Steady. Spring bran, $20.50 ton. Standard mids., $21.00. Corn-meal, $23.00. Gluten, $26.75. Hominy, $24.00.

WASHINGTON PRODUCE

Washington, D. C., March 10, 1913.

Eggs.—Near-by, fresh, per dozen, 18c; southern, per dozen, 18c.

Cheese.—New York, new, per pound, 19c; flat, 19c.

Butter.—Best prints, per pound, 39c; tub, 38c; process, 27@28c; undergrades, 25c.

Live Poultry.—Hens, per lb., 18c; roosters, 10c; springers, 20@22c; turkeys, 20@23c; geese, live, 12@15c; ducks, 16@18c.

Vegetables.—Potatoes, bbl., $1.25@1.50; 50@80c bu. Onions, 50@90c per 100-lb. bag. Lettuce, per bas., 75c@$1.50. Beans, $2.00@4.00 basket. **Peppers, per crate, $1.00@1.50. Egg** plants, per box, $1.50@2.50. Squash, per bbl., $1.50@2.25. Beets, $1.50@2.25 per 100 bchs. Mushrooms, per lb., 25@40c. Carrots, 1½@2½c bch. Cabbage, $2.00@2.50 bbl. Radishes, 50c@$1.00 per 100. Cauliflower, $1.25@1.75 crate. Apples, $1.50@4.00 bbl.

WILMINGTON PRODUCE

Wilmington, Del., March 10, 1913.

Trading on the markets during the week was normal, and prices remained at about last week's figures. Eggs are more plentiful and the demand for chickens, both live and dressed, has somewhat declined.

Fruits.—Apples, 50c basket. $2.50@4.00 bbl. Strawberries, 30@40c.

Vegetables.—Potatoes, 80c bu.; $2.00 bbl. Cabbage, 75c@$1.00 bbl.; 25c basket. Onions, 40c basket. Celery, 60@85c doz. Spinach, $1.00 bbl. Sweet potatoes, 75c basket; $2.50@3.25 bbl. Kale, 75c bbl. Carrots, 10c ½ pk. Lettuce, $1.50 basket.

Poultry.—Chickens, live, 16c; do., dressed, 18c. Ducks, 12@13c lb.; dressed, 16c.

Eggs.—20@21c; storage, 17@18c.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., March 10, 1913.

The cattle market was strong and higher on the choicest grades.

	Beef Cattle	Sheep and Lambs	Hogs
Total for week	4,998	11,363	4,580
Previous week	4,984	12,265	3,739

Best steers	$8.75@9.00
Choice steers	8.50@8.62½
Good	8.00@8.25
Medium steers	7.25@7.50
Common steers	6.50@7.00
Bulls	4.75@6.75
Fat cows	5.50@6.75
Thin cows	3.00@3.50
Milk cows	40.00@65.00

Veal calves are easier.

Best calves	$10.50@11.00
Good to choice do.	10.00@10.50
Medium	**7.00@8.00**
Common do.	**6.50@6.75**
Thin do.	**5.00@8.00**

Sheep are steady and lambs a shade higher.

Extra wethers	$6.75@7.00
Choice wethers	6.25@6.50
Good wethers	5.50@6.00
Common to medium	3.00@5.00
Ewes, fat	**5.00@5.50**
Extra lambs	**9.50@9.75**
Good to choice do.	9.25@9.50
Common to medium	6.00@8.50

Hogs are stronger, westerns selling at $13.00.

City Dressed Stock.—Choice classes of dressed meat are firm. Trade is **normal. Steers, 10@13½c; heifers, 9@12c; cows, 7½@10½c. Veal calves, 14@16c; country dressed calves, 13@14½c;** extra do., 15c. Sheep, $10@11; extra wethers, 12c. Spring lambs, 15@17c. Hogs, 13¼c.

BALTIMORE LIVE STOCK

Baltimore, Md., March 10, 1913.

Beef receipts for the week were 1,719 head. The market is steady.

Steers	$4.75@8.25
Heifers	4.35@6.75
Cows	2.00@5.40
Bulls	3.25@5.25
Fresh cows	$27.50@77.50

Sheep and lamb receipts were 2,754 head. The market is stronger.

Sheep	$4.00@7.00
Lambs	6.50@9.60

There were 11,016 hogs on sale during the week. Market steady.

Light westerns	$9.50@9.75
Heavy to medium	9.35@9.45
Near-by	9.40@9.55
Pigs	9.00@9.25
Roughs	6.50@8.00

Calf receipts for the week were 369 head. The market is higher, with calves at $6.00@11.25.

BUFFALO LIVE STOCK

Buffalo, N. Y., March 10, 1913.

Cattle receipts today were 2,500 head. The market held firm and active thruout all of last week and the advance in prices was maintained today. Some grades went from 10 to 15 cents higher.

Choice heavy steers	$7.75@8.25
Medium	7.50@8.25
Yearlings	7.25@8.25
Plain heavy	6.75@7.25
Handy butchers	7.00@7.75
Good to choice fat cows	6.00@6.25
Good to choice heifers	7.00@7.75
Butcher bulls	5.50@7.00
Feeders	5.40@6.60
Stockers	4.50@5.65
Cows and springers	40.00@85.00

Calf receipts today were 1,200 head. The heavy supply brought prices down about 50 cents per cwt.

Choice veals	$11.50@11.75
Light and thin	4.00@6.50

There were 1,700 head of sheep and lambs on sale today. Under a rather light demand prices declined somewhat.

Choice lambs	$9.00@9.25
Poorer grades	6.00@6.50
Yearlings	7.00@8.25
Wethers	6.75@7.00
Ewes	6.00@6.25
Sheep	6.50@6.75

Today's hog receipts were 14,000 head. The market was lower than last week, which was bolstered up by good eastern buying.

Heavies	$9.15@9.20
Mixed and medium	9.15@9.20
Yorkers	9.25@9.30
Light Yorkers	9.25@9.30
Pigs	9.25@9.30
Stags	6.50@7.50
Roughs	8.00@8.25

PITTSBURGH LIVE STOCK

Pittsburgh, Pa., March 10, 1913.

Today's cattle receipts were 75 loads. Heavy steers were easier, while other grades were strong at an advance over last week's prices. Bulls, fat cows and heifers shared in the advance.

Good to choice	$8.50@8.75
Good, 1300 to 1400 lb.	$8.30@8.50
Medium to good, 1200-1300 lb.	8.00@8.35
Tidy, 1050-1150 lb.	8.30@8.45
Fair to medium, 900-1100 lb.	7.70@8.00
Common to good fat oxen	5.00@7.00
Common, 700-900 lb.	5.60@6.75
Common to good fat bulls	4.00@7.25
Common to good fat cows	4.00@7.00
Heifers, 700 to 900 lbs.	5.00@7.85
Bologna cows	3.75@4.25
Fresh cows and springers	25.00@80.00

Calves.—Receipts were 400 head. The demand was good and the market firm.

Heavy and thin calves	$5.00@7.50
Veal calves	8.00@11.50

Hogs.—Today's hog receipts were 30 double-deck loads. The market was 20 cents lower than on Saturday. Demand and trade has been good.

Prime heavy	$9.10@
Prime medium weights	9.15@
Heavy mixed	9.15@
Best heavy Yorkers	9.15@
Light Yorkers	9.45@
Pigs as to quality	9.10@9.45
Common to good roughs	7.50@7.90
Stags	6.50@7.00

The supply of sheep and lambs today was 18 double-deck loads. The demand was active and stronger on sheep and steady on lambs. Not many choice sheep and lambs have been coming.

Prime wethers	$7.00@7.25
Good mixed	6.25@6.60
Fair mixed ewes and wethers	5.50@6.00
Culls and commons	3.00@4.50
Spring lambs	6.00@9.50
Good mixed	5.50@9.00

NEW YORK LIVE STOCK

New York City, March 10, 1913.

Cattle receipts were 3,365 head. The market is irregular.

Steers	$6.00@9.25
Bulls	5.50@7.25
Cows	3.50@6.50

Dressed beef strong. Native sides, 10½@11½c; Texas, 9½@11c.

Calf receipts were 2,394 head. The market is higher.

Choice veals	$12.00@13.00
Good veals	9.00@11.50
Culls	6.00@8.50
Barnyard calves	4.50@6.00
Fed calves	6.00@8.00
Westerns	3.50@5.00

Dressed calves are strong.

City-dressed veals	15@19c
Country dressed veals	11½@16c

Sheep and lamb receipts were 6,068 head. Sheep are strong and lambs steady.

Sheep	$4.75@6.75
Culls	3.00@4.50
Lambs	8.00@9.50
Culls	7.00@7.50
Yearlings	7.00@8.50

Hog receipts were 9,147 head. The market is firm at $9.30@9.50.

ELGIN BUTTER QUOTATION

Elgin, Ill., March 10, 1913.

The quotation committee of the Elgin Board of Trade this afternoon declared butter firm at 35c a pound.

NEW YORK MILK QUOTATION

The wholesale milk price is $1.71 per 40-quart can for class C; class B, $1.81.

PITTSBURGH HAY AND GRAIN

Pittsburgh, Pa., March 10, 1913.

The hay market is gradually recovering from its recent slump. Receipts have again become about normal and prices are more satisfactory. The straw market is still dull. Receipts more than ample to meet the demand. No. 1 timothy, $15.00@15.50; No. 2 do., $12.50@13.50; No. 3 do., $10.00@11.00; No. 1 light mixed, $13.50@14.00; No. 1 clover mixed, $13.50@14.00; No. 2 do., $10.00@12.00. No. 1 clover, $13.00@13.50; No. 2 do. $8.00@10.00. No. 3 prairie, $9.50@10.00; No. 4 do., $7.50@8.50. No. 1 oat straw, $8.50@8.75; No. 2 do., $8.25@8.50; No. 1 wheat, $8.50@8.75; No. 2 do., $8.25@8.50; No. 1 rye, $10.25@10.50. No. 2 do., $8.75@9.00. Ear corn arrivals are in very slight demand. Market dull. No. 2 yellow, 52½@53c. No. 2 high mixed, 51½@52c. Shelled corn is dull and unimproved; arrivals are hard to place at satisfactory quotations. No. 3 yellow natural, 52½@53c; sample, 50½@52c. Oat receipts are fully equal to the demand. Market quiet. Large car shipments are not wanted. No. 2 white, 36½@36¾c; standard, 35½@36c; No. 3 do., 34½@34¾c; No. 4 do., 32@33c. The demand for middlings is very slow. Market dull. No. 2 white mids., $24.50@25.00; No. 1 brown mids., $22.00@22.50. Winter wheat bran, coarse, $22.50@23.00; do., medium, $21.50@22.00.

TOBACCO MARKET

With 15 to 20 percent of the crop in growers' hands and under present depressed market conditions the situation is not at all encouraging to the grower who has not sold. It is feared that the situation will become panicky, as growers are anxious to find buyers, and the latter may take undue advantage of the situation to precipitate a landslide upon producers. This, however, need not be permitted if growers will but stand firm remembering that it is generally better not to sell than to sell at a sacrifice. During the past week some sales were made at slightly reduced prices. The disposition of packers was to beat prices down. Much interest is being shown in the crop of the present year, and according to the most reliable information at hand the acreage will be about the same as last year.

A Lancaster grower found in his crop a curious freak leaf with two large leaves branching from the main stem, each of them being about 20 inches in length, while from one of them a third leaf, perfectly formed, has grown. A fourth leaf was also started, but was doubtless stopped by the end of the season and maturity of crop. Tobacco is prolific in freaks and sports, some of the newer varieties, including the now famous white burley, having originated in this manner, coming as a single white plant in a field of dark burley.

The relative importance of tobacco as a producer of revenue is well shown by the report of the ninth internal revenue district for the month of January, viz: Cigars, $205,781.79; beer, $112,904.50; spirits, $37,714.93; tobacco, $23,398.25; miscellaneous, $1,636.58; special, $1,282.67.—H. E. Tweed, March 10, 1913.

DR. DE LAVAL DEAD

Carl Gustaf Patrik De Laval, known thruout the world as the inventor of the cream separator, died February 3, in Stockholm, Sweden, his native city, at the age of 67 years. He brought out his invention for separating cream from milk by means of a centrifugal machine in 1878, and it was thru this achievement that he was best known thruout the agricultural world. His activities, however, were by no means confined to this work. Among his other notable inventions were the steam turbine which bears his name, the milk tester, a centrifugal churn, an emulsifier, a milking machine, a new form of lamp, a frictionless vessel, an explosion proof steam boiler and a process of extracting metals from ore by electrically developed magnetism. He continued actively in experimental work until the end.

PRESIDENCY OF MARYLAND AGRICULTURAL COLLEGE STILL OPEN

The board of trustees of the Maryland Agricultural College met March 3 to receive report of the special committee to recommend a man for the presidency of the college. The committee failed to give a unanimous report, two members recommending the election of Prof. H. A. Morgan, of the Tennessee Experiment Station, and the other two the election of B. A. Crocheron, principal of the Sparks Agricultural High School. It was decided to postpone action for 30 days, during which time the committee will continue its work. The committee of the City-wide Congress of Baltimore visited the agricultural college March 7, preliminary to presenting an additional report to the congress relative to the reorganization of the college.

SMOOTH TREE AGENTS

Attention has been called to the practices and methods of certain agents selling trees thruout this state. Professor Surface, of the Pennsylvania Department of Agriculture, sends us a letter which was addressed to him by a farmer in Clearfield County, saying that a tree agent giving his name as J. C. Shaffer, of Millhall, Pa., was offering for sale peach trees which were especially acclimated to that county. The agent sold these trees at 25 cents each, claiming that they were especially recommended by Professor Surface and other horticultural authorities, and that there were only four varieties of peaches acclimated to the central counties of the state.

Professor Surface replied to the correspondent, as well as to the agent, that he has never recommended these trees or authorized the use of his name in connection with the sale of them; that he had positive proof that this agent had swindled the buyers in four counties of this state, and that he would prosecute the agent if his name is again used to make a sale.

Our readers will do well to investigate every extravagant claim in connection with the sale of trees, as in everything else, before paying out good money. Remember, too, that state officials seldom if ever authorize the use of their names in connection with the sale of commercial products. If endorsement is given, it will be in a form that the agent can show you in some way more substantial than his mere word.

A MARYLAND RURAL EXCHANGE

A farmers' exchange is proposed for the growers of Baltimore and Harford counties, Md. An organization was effected at a meeting held February 25. Charles Snavely, of Hydes, was elected president and S. Seymour Smith, of Long Green, secretary. The minimum of capital stock was fixed at $5,000, the shares to be valued at $5 each. The movement is in good hands, and promises to be of great value to the farmers of these counties.

Poultry House Construction.—"The secret of success in raising poultry is to provide conditions as nearly natural as possible. Simplicity and economy in construction, perfect dryness, good light and ventilation, with due regard to comfort, are the essential features of a poultry house." Bulletin 107 of the Missouri Experiment Station, Columbia, Mo., tells how these essentials of house construction are most easily and cheaply obtained. The bulletin includes many good plans for houses, both of the closed and open types.

NOTES AND CATALOGS

Reducing the Cost of Living.—This is the title of a 34-page booklet telling of the manufacture and low prices of the Glen Rock Woolen Company's made-to-measure clothes. It gives details in a direct-from-factory system that should appeal to all who are looking for good clothes at moderate prices. The book contains 35 samples of cloth from which to select material for suit or overcoat at prices ranging from $10 to $22, and trousers, coats, vests, etc., at proportionate prices. It is the claim of this company that it is saving from $5 to $8 to every purchaser of a suit or overcoat, and the quality, style and finish of the samples indicate that this claim is not exaggerated. All goods are sold under a legal guarantee that the garments will keep their style until worn out, that the cloth and linings have been permanently shrunk, securing a permanent and perfect fit, and that the cloth is absolutely the best quality for the price. If you are looking for top quality at reasonable prices, this booklet will interest you. It will be mailed free upon postal card request. Address Glen Rock Woolen Co., 201 Main St., Somerville, N. J.

Facts for Horse Owners.—Forty Facts for Horse Owners is the title of a valuable 32 page booklet being sent out by The Lakeside Remedy Co., 5405 Calumet Ave., Chicago. It gives valuable information on thoroughpin, spavins, big knee, capped hock, shoe boil, distemper, bronchitis, stocked legs, greese heel or scratches, moonblindness or ophthalia, heaves, feeds and feeding, and other common ailments and common practices with horses. The book is free on application to the above address.

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FARMS FOR SALE

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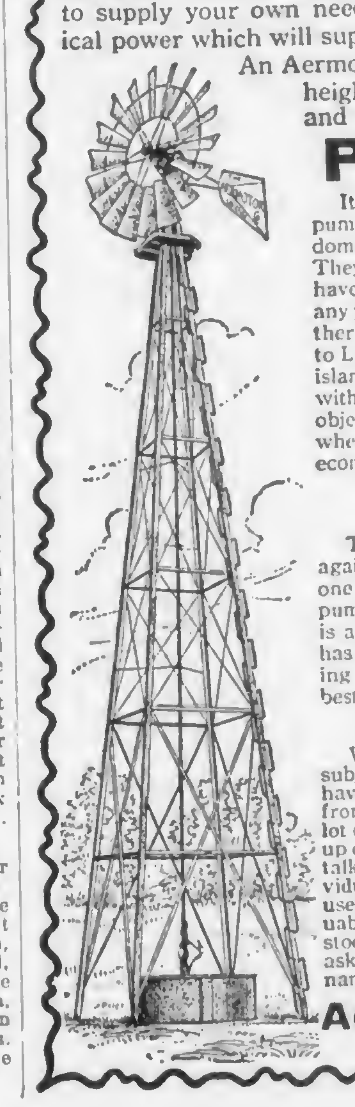

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TIGHT BINDING

SECRET SERVICE

By WM. GILLETTE and CYRUS TOWNSEND BRADY

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CHAPTER XX

The Last Reprieve

General Randolph was evidently in a great hurry. Public affairs of great moment pressed upon him, and it was an evidence of the interest he took in the case of Captain Thorne that he gave him even a minute of his valuable time. He had come on horseback, and everybody could see that he was anxious to get thru with his appointed task and get away.

''Ah, Sergeant,'' he said, answering the latter's salute as he brought the guard to attention, and then his eye fell upon Captain Thorne. ''You have the prisoner, have you?''

''Just taking him out, sir,'' answered the Sergeant, saluting again.

''To prison?''

''No, sir.''

''Where, then?''

''To execute the sentence of the court, sir.''

''Oh!'' exclaimed the General, looking hard at the Sergeant. ''He has had his trial, has he?''

But Arrelsford, who chafed at thus being left out of the game, now stepped over and took up the burden of the conversation before the Sergeant could reply.

''We have done everything according to regulation, sir,'' he said, saluting in a rather cavalier manner. He did not like General Randolph. If it had not been for his interference, the affair would have been settled long ago, and he still cherished a grudge against the latter for having arrested a man so important as the trusted agent of the Secret Service. ''The findings have gone to the Secretary.''

''Ah!'' said General Randolph blandly. He did not like Mr. Arrelsford any better than Mr. Arrelsford like him.

''Yes, sir,''

''And he was found guilty, I presume?''

''Certainly, sir.''

''And what are you going to do with him?''

''There is no time for a hanging now, and the court has ordered him shot.''

''Oh, indeed. And what were the charges?''

''Conspiracy against our government and the success of our arms, by sending a false and misleading despatch containing forged orders, was the particular specification.''

''Well,'' said General Randolph, ''I regret to say that the court has been misinformed.''

''What!'' cried Arrelsford, in great surprise. ''The testimony was very plain.''

''Yes, indeed, sir,'' interposed the Sergeant.

''Nevertheless,'' returned the General, ''the man is not guilty of that charge. The despatch was not sent.''

Now Edith Varney had scarcely moved. She had expected nothing, she had hoped for nothing, from the advent of the General. At best it would mean only a little delay. The verdict was just, the sentence was adequate, and the punishment must and would be carried out. She had listened, scarcely apprehending, busy with her own thoughts, her eyes fastened on Thorne, who stood there so pale and composed. But at this remarkable statement by General Randolph she was suddenly quickened into life. A hope, not that his life might be saved, but that it might be less shameful to love him, came into her heart. Wilfred stepped forward also.

The terse statement of the General had caused a great deal of excitement and commotion in the room. Only Thorne preserved his calmness. He was glad that Edith Varney had learned this, and he was more glad that she had learned it from the lips of the enemy, but it would make no difference in his fate. He was not guilty of that particular charge, but there were dozens of other charges for which they could try him, the punishment of any one of which was death. Besides, he was a spy caught in the Confederate lines, wearing a uniform not his own. It was enough that the woman should learn that he had not taken advantage of her action; at least she could not reproach herself with that.

''Why, General,'' began Arrelsford, greatly dismayed, ''I hardly understand what you mean. That despatch I saw him myself——''

''I say that that despatch was not sent,'' he roared, striking the table with his hand. ''I expected to arrive in time for the trial. There is one here who can testify. Lieutenant Foray!''

From among the group of staff officers who had followed General Randolph, Lieutenant Foray stepped forward before the General and saluted.

''Did captain Thorne send out that despatch after we left you with him in the office an hour ago?'' asked the older officer.

''No, sir,'' answered Foray promptly, glancing from Arrelsford's thwarted and flushed and indignant countenance to Edith Varney's face, in which he saw the light of a great illumination was shining. ''No, sir,'' he repeated; ''I was just about to send it by his orders, when he countermanded it and tore up the despatch.''

''And what despatch was it?''

''It was one signed by the Secretary of War, sir, removing Marston's Division from Cemetery Hill.''

''You hear, gentlemen,'' said the General, and, not giving them time to answer, he turned again to Foray. ''What were Captain Thorne's words at the time?''

''He said he refused to act under that commission, and crumpled it up and threw it away.''

''That will do, Lieutenant,'' said General Randolph triumphantly. He turned to Arrelsford again. ''If you are not satisfied, Mr. Arrelsford, I beg to inform you that we have a despatch from General Chesney at the front, in which he says that no orders were received from here. He got an uncompleted despatch, but could not make anything out of it. Marston's Division was not withdrawn from Cemetery Hill, and our position was not weakened in any way. The attack there has failed.'' There was a low murmur of astonishment from the group of men in the room. Edith Varney did one significant thing. She made two steps in Thorne's direction. That young man did not dare to trust himself to look at her. ''It is quite plain,'' continued the General, ''that the court has been acting under an error. The President of the Confederacy is, therefore compelled to disapprove the finding, and it is set aside. He happened to be with the Secretary when the finding came in.''

Arrelsford made one last desperate effort.

''General Randolph,'' he said, and, to do him justice, he did not lack courage, ''this was put in my hands, and——''

General Randolph laughed.

''I take it out of your hands,'' he said curtly. ''Report back to the War Office, or the Secret Service Office, with my compliments, and——''

''But there are other charges upon which he could be tried,'' persisted Arrelsford. ''He is a spy anyway, and——''

''I believe I gave you orders, Mr. Arrelsford,'' interrupted the General, with suspicious politeness.

''But hadn't I better wait and see——''

''By God, sir,'' thundered Randolph, ''do I have to explain my orders to the whole Secret Service of the Confederacy? Don't wait to see anything. Go at once, or I will have you escorted by a file of soldiers.''

Arrelsford would have defied the General if there had been the least use in the world in doing it, but the game was clearly up for the present. He would try to arrange to have Thorne rearrested and tried as a spy later. Now he could do nothing. He walked out of the room, pride enabling him to keep up a brave front, but with disappointment and resentment raging in his heart. He did not realize that his power over Thorne had been withdrawn. In the great game that they had played, he had lost all points. They all watched him go, not a single one in the room with sympathy, or even pity.

''Now, Sergeant,'' said the General, as they heard the heavy hall door close; ''I want to speak to the prisoner.''

''Order arms!'' cried the Sergeant. ''Parade rest!'' As the squad assumed these positions in obedience to his commands, the Sergeant continued, ''Fall out the prisoner.''

Thorne stepped forward one pace from the ranks, and saluted the General. He kept his eyes fixed upon that gentleman, and it was only the throbbing of his heart that made him aware that Edith Varney was by his side. She bent her head toward him; he felt her warm breath against his cheek as she whispered:

''Oh! Why didn't you tell me? I thought you sent it, I thought you——''

''Miss Varney!'' exclaimed the General in surprise.

But Edith threw maidenly reserve to the winds. The suddenness of the revelation overwhelmed her.

''There is nothing against him, General Randolph, now; is there? He didn't send it. There's nothing to try him for!'' she said.

General Randolph smiled grimly at her.

''You are very much mistaken, Miss Varney,'' he answered. ''The fact of his being caught in our lines without his proper uniform is enough to hang him in 10 minutes.''

Edith caught her heart with her hand with a sharp exclamation, but General Randolph had turned to speak to the prisoner.

''Captain Thorne,'' he said, ''or Lewis Dumont, if that is your name; the President is fully informed regarding the circumstances of your case, and I needn't say that we look upon you as a cursed dangerous character. There isn't any doubt whatever that you ought to be shot right now; but, considering the damned peculiarity of your behavior, and that you refused to send out that despatch when you might have done so, we've decided to keep you out of mischief some other way. You will be held a prisoner of war.''

Captain Thorne was almost too dazed to realize the purport of the decree. He mechanically saluted, and from his lips broke a murmured.

''Thank you, sir.''

The General looked at him severely, and then, seeing Edith Varney, turned away and engaged in conversation with his staff. His intention was obvious, and Edith immediately embraced the opportunity.

''Oh!'' she said; ''that isn't nearly so bad as death,'' and before them all she stretched out her hand to him.

''No.?'' queried Thorne in a low voice.

''No,'' she said, forcing herself to look at him, ''After a while perhaps—some time——''

''Oh!'' said Thorne. ''Some time? If it's some time, that's enough.''

Mrs. Varney, having succeeded in getting Howard quiet and composed, had been in the room since the advent of General Randolph.

''Mamma,'' said Edith, ''won't you speak to him, too?''

Mrs. Varney approached him, but Wilfred was quicker.

''I would like to shake hands with you,'' he said, with boyish enthusiasm.

''What, again?'' said Thorne, smiling. ''All right.'' He stretched out his hand. ''Go ahead.''

''And so would I,'' said Caroline, following the lead of her boy lover.

''Don't be afraid now,'' said Wilfred. ''Everything will be all right. They will give you a parole, and——''

''A parole!'' said Caroline. ''Goodness gracious, they will give you hundreds of them, I am sure.''

But General Randolph turned once more.

''One moment, please,'' said the officer. As he came forward, the others fell back. Only Edith Varney kept her place close to Thorne's side. ''There is only one reason on earth why the President has set aside a certain verdict of death. You held up that false order and made a turn in our favor. You are not to be tried as a spy, but held as a prisoner of war. We expect you to make that turn complete and enter our service.''

''Never,'' replied Thorne instantly. ''That's impossible, sir.''

''You can give us your answer later,'' said the General.

''You have it now.''

''You will be kept in close confinement until you come to our terms,'' continued the older officer.''

''You may make me a prisoner for life, then.''

''You will see it in another light before many days, and it wouldn't surprise me if Miss Varney had something to do with a change in your views.''

''You are mistaken, General Randolph,'' quickly interposed Edith. ''I think he is perfectly right.''

''Oh, very well,'' said the General, smiling a little. ''We will see what a little prison life will do. Sergeant?''

''Yes, sir.''

''I have turned the prisoner over to Major Whitfield. He requests you to take the prisoner to his office, where he'll take charge of him.''

''Very good, sir,'' answered the Sergeant.

''What is it?'' whispered Thorne to Edith. ''Love and good-bye?''

''No,'' answered the girl; ''only the first.''

She stopped and looked up at him, her face flushed, her heart throbbing, her eyes shining gloriously. ''And that every day, every hour, every minute, until we meet again.''

''Thank God,'' whispered Thorne. ''Until we meet again.''

''Attention!'' cried the Sergeant. ''Carry arms! Left face! Fall in the prisoner! Forward—March!''

AFTERWORD

And so the great adventure is over, the story is told, and the play is played. It is hard to tell who lost and who won. It made little difference in the end that Marston's Division had not been withdrawn, and that the attack on Cemetery Hill had failed. It made little difference in the end that Arrelsford had been thwarted in his attempts to wreak his vengeance upon Thorne. It made little difference in the end that Thorne refused to enter the service of the Confederacy, preferring imprisonment for life. For the days of that Confederacy were numbered. It was even then tottering on the verge of its grave in spite of the brave front it had kept up.

Three days after the events of that night, and Richmond had fallen, and presently the last of the Confederate defenders had halted at Appomattox. The Stars and Bars were hauled down for the last time. The army was disbanded. The prisoners were released. There was a quiet wedding in the old house. Howard, happily recovering from his wounds, was present. General Varney himself gave away the bride—reluctantly, to be sure, yet he did it. Wilfred took the place of the brother of Captain Thorne—to continue to call him by the name he had assumed—and acted as the best man. To whom should be given the coveted privilege of attending the bride but to Miss Caroline Mitford! And Miss Kittridge and the few other guests, including General Randolph, saw in the younger couple indications that when a few more years had made it suitable, the two who played the second part on this interesting occasion would be principals themselves.

There was much opposition, of course, to the wedding of Captain Thorne and Edith Varney, and many bitter things were said, but there was no restraining the young people. They had lived and suffered, they had almost died together. The years of peace and harmony and friendship that came to the sections at last, and the present happiness that was theirs immediately, convinced even the most obdurate that what they had done was exactly right.

(The End.)

THE CAPTAIN AND JULIET

By T. A. Tefft

One of the soldier's wives gave Caroline the egg from which he was hatched. Caroline noticed him first when differentiating himself from the group about him, he came fearlessly forward to eat from her lap, looking her straight in the eye between corn grains and measuring her with the direct gaze of youth. He was very young at the time—so was Caroline.

The Captain became cock of the barnyard. He had only, as he waxed in stature, to walk with that superb, all-conquering air of his in whatsoever direction he coveted for the old chiefs and young rivals to vanish from his path, as May showers before the sunshine. Caroline never saw him fight a rooster in his own yard. Perhaps he thought them unworthy to fight; as for the most part they were but heavy old stagers of Plymouths, or lesser sprouts having no pedigree at all. Captain was of another and an alien race, and of all the roosters Caroline ever knew, he was the best. He had a clear and searching eye that no detail escaped, a bearing full of dignity and poise. His spurs were as sharp as daggers' points, and his long curved plumes, among which the breezes rustled, were as black and as brilliant as those seen on the heads of Italy's officers.

He was a kind old fellow, too. The common sort of roosters make it a custom, when feeding, to drive the smaller cocks away, pecking at half-grown chickens who approached too near, or at anyone who dared to take a pleasure in their presence. The Captain was of a different calibre. Everyone could feed when he did, for all he cared, the world being big and its joys manifold. It may be, too, that he possessed a certain patriarchal sense and was happiest in having the whole barnyard round him and well satisfied at the dining hour, for he used to stop in the very middle of his feeding to glance about sharply, taking in everything at once—a hundred or more hens and roosters scattered here and there, he chief among them all.

Feeding on the outskirts, the younger cocks would, to be sure, on catching the Captain's eye, turn suddenly pausing ready for instant flight should he make a sudden movement in their direction. There was a young gray cock, with pale comb and feathery legs, who was always most conspicuous in his cowardice—a rooster whom Caroline never liked. Altho always ready to run when Captain looked his way, he would pretend to having quite finished his meal, and not frightened at all, being, in fact, just on the point of leaving anyhow! The little chickens were never afraid, whatever the Captain did. They knew that he meant them no harm. Every old hen with a brood to feed knew it, too, and that in all his life this brave and splendid warrior, for all his martial air, had never pecked at a little chicken, nor frightened one, nor been unkind. Many a time, as Caroline herself had seen, he carried a party of them off for half an hour's holiday on the grassy slope of the barnyard, finding for them, at almost every step, wonderful never-to-be-described surprises hidden under his great strong claws.

It was the Captain's habit when a day was fine, the skies a sapphire and the breezes brisk, to leave his family behind him, and from the grassy slope to fly to the very highest notch of the gate-post, where, as from the turrets of a castle, he could survey his enemies' lands. Standing there, his comb shining blood-red in the sunshine, his plumage glistening in the light, he would send forth a clarion note so clear, so high, so all-defiant, that the very heavens above him seemed to hear and carry off his valiant cry. If his crow were answered he would descend at once, to be gone, sometimes for hours, no hens in his train this time. He came back, usually, for his noonday rest, dusty, but victorious from a fight with an enemy. No one could doubt that who saw him stride home. When Caroline fed him, she would ask him severely what he had been doing; he would, by way of a reply, pause for a moment to look into her face, first with one triumphant eye, then with the other. He knew that Caroline knew. After one or two of these skirmishes, however, he took no notice of her questions but continued to eat, considering her queries superfluous, perhaps, or better not answered at all; and by and by she did begin to understand, for rumors used to come her way of promising young roosters destroyed or laid by for repairs in neighboring yards.

It was at about this time that one of the officers presented Caroline with a Black Spanish hen, no longer young, and never at any time graceful, but famous for the size of her eggs. For all that, passee as she was, she had a certain air about her which none of the other humdrum hens, in their quiet grays and browns, had ever possessed. Her feathers were as black and as brilliant as those of the Captain, while her comb—flapping gaily when she walked—was as red as a ruby.

Juliet was the name that Caroline gave to this newcomer. Juliet, instead of getting up and walking off when Caroline put her down in the barnyard, sat quite still just where she had placed her. At once the other hens and roosters made a sudden outcry, uttering that rapid little roulade of rumbling notes employed by poultry as signals of alarm, the hens meanwhile and with one accord, setting fiercely upon her, as tho they would kill or drive her away. They wanted no strangers about.

Juliet never moved, but continued to crouch there, her yellow legs tucked well under her, her red comb dangling over one eye, her frightened gaze searching everywhere for a way of escape. This made the hens peck harder than ever, the staid old Plymouths being fiercest of all.

The Captain was standing not a dozen paces off, tall, erect, silent and magnificent, seeing everything with those clear eyes of his, but taking no part in the disturbance, quarrels among hens being no concern of a self-respecting rooster.

Juliet saw him. She was not too frightened for that. In a flash she seemed to understand his strength and his weaknesses as no one in the yard after long acquaintance had done. With a scream, like that which a hen uses when frightened off its perch, she jumped away from her persecutors, and rushing toward the Captain, crouched low at his feet, looking up in his face as if imploring for protection.

The others must have expected him to be angry, such conduct never having been heard of among the Plymouth Rocks before, for they uttered another rapid roulade, this time full of startled disapproval.

But the Captain was not angry! The unusualness of her appeal had bewitched him. Suddenly he seemed to be walking on air, his head in the clouds. He stepped gaily about her, his feet lifted breast-high with each step, his toes turned in with delight, looking down at her all the time with one eye from the very hight of his amazing felicity.

The others, when they saw this, turned simultaneously away as if nothing were happening, resuming their everyday occupations with a vigor that was delightful, one scratching for herself, another for her chickens, while still another, with a loud and matronly cluck, called her young brood after her, leading them out of reach of the scandal. Caroline laughed aloud. Those who with heads thrust forward with every step walked away from the Captain and Juliet, declining even the attendance of young roosters, had all the air of saying: ''I hope he sees that some hens, at any rate, know how to behave themselves modestly.'' As if the Captain at that moment could think of anyone but Juliet—Juliet with her dangling red comb crouching appealingly there at his feet.

It was her turn to have been flattered now, his attentions were so marked, but pretending to be more frightened than ever, she screamed and jumped again, crouching several feet off—not out of reach, however. The Captain found her conduct enchanting, and followed her quickly, strutting about her prostrate figure, lifting up his feet still higher, his toes now quite tangled up in his joy, while the golden rings about his eyes shone almost like copper. He never thought how old she was (she was older than he), and it made no difference to him how many times she jumped, nor how many times he followed. Her nervous alarms only added to her attractions. He had courage enough for both.

When he found her too agitated to be won by pursuit, he changed his tactics and began to scratch, as if for himself, of course, pretending, as he cried out in the greatest excitement, to having found untold treasures in the ground. The Captain's methods were time-worn, being nothing more than the playing of a game old as the masculine gender itself. But Juliet, for all that a hen of her experience must have seen in other yards, could not see thru the present trick. Before many minutes of his scratching had passed her curiosity had the better of her hesitations, and she was up beside him, eager for what he was promising her, until he, still scratching and still promising, led her off by easy stages and they found themselves alone.

Caroline tried to coax him back, knowing that he was breaking all the rules of the barnyard going off in this way with only one hen, when, as chief of them all, he should have had a dozen at least in his train. But the Captain, who had never before failed to turn when she called, refused now.

Day after day, for a week or more, he went off alone with her, neglecting everyone else. All this time, too, she laid no eggs, and Caroline, who had lost her faith in her, was on the point of giving her away when, one May morning, she left him to fly into a barrel of shavings standing under the willows.

It was a warm day; the barnyard was quiet. One could have heard the fall of a green willow leaf. Even the dust baths were over for the morning, and the Captain, like the others, was dozing. Ensconced among her shavings, Juliet, for the moment, was attracting no attention. Then all at once, and quite without warning as the silence grew, a wild scream was heard, and a black figure with a dangling red head-piece flew out of the barrel as if something had frightened her out of her wits. Round and round the yard it went, bumping against everything—little chickens and big, the stone wall, the wheelbarrow, the cow's legs, screaming every instant as if the very furies were behind her. Some of the startled dozers feared some danger, and cried out as they would have done had a hawk been discovered descending overhead. The Captain knew better. He recognized, as Caroline did, the Black Spanish hen, and realized that Juliet had laid an egg.

Tho roused as suddenly as the others from his nap, he uttered no cry of alarm, nor was he for an instant off his guard. If he felt sorry, or ashamed, or even surprised that Juliet had screamed instead of cackling, as her quiet neighbors did, he never let Caroline know it, nor did he betray himself to them. He rose quickly, the gayest of notes in his voice, his plumes quivering with the pleasure of his welcome, crowed once, tried to overtake her with his splendid stride, and finding that impossible, left the others to go off and scratch with excitement near-by. From the joy of his tones and the fuss that he made, one might have supposed the riches of Golconda under his feet. Juliet, too nervous at first to take any notice, could not resist him at the last. With various crouchings on her way, pauses of alarm, and frequent lookings about as if ready to fly off in another attack, she came toward him slowly. Then, when he had quite won her to him, he led her off for a walk, still scratching. Juliet always had to be amused.

The next day just before the hour for laying the egg had arrived, Caroline saw him leading her into the barn. He was in gayest and most beguiling mood; she all terror and distraction, her head turned in every direction at once. Evidently he had not liked her nesting in the barrel, too many critical eyes were there, for thru the trap door in the hayloft Caroline could see him leading her about in his most devoted manner on the floor below where the sleigh and the buggy and some old boxes were kept. The Captain went in and out of a dozen impractical places, always delighted with what he discovered, sitting down in each one that he proposed, as tho he were the hen himself, and all to show her how comfortable she was going to be. She never failed to be lured by his excitement, liking his attentions and their being together, perhaps; or wanting him to realize just how difficult it is for a hen to find something suitable for every emergency; or thinking, maybe, that anyone making such a to-do over what he had found, must have something worth considering.

(To be continued.)

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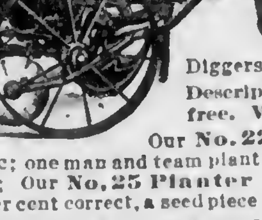

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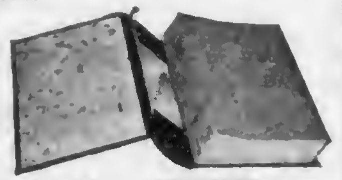

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Household

EVERYDAY ETIQUETTE

How to Avoid the Social Pitfalls

By Marion Harris Neil

There are many books that profess to give points in everyday etiquette, but I have never come across one that told people whose early education had been neglected how to avoid the social pitfalls that gap for the unwary.

Nowhere is the lack of early upbringing so apparent as in table manners. The misery of the guest who has not been "well brought up" begins with the unfolding of the table napkin and ends with the dessert. He betrays his lack of acquaintance with the uses of the napkin by the gingerly way in which he unfolds it and by the respect he pays to its immaculate condition; wiping his mouth with his handkerchief, honest man, as he has been accustomed, rather than crumpling the awful square of rustling linen. Then when he leaves the table he folds it up nervously, and makes it look as much as possible as he found it—a trait duly noted by the waiter as he sweeps it contemptuously into his armful of soiled linen.

Firstly, then, let me say to all nervous diners, unaccustomed to ceremony, that it is bad manners not to use what is put down for use. Take fish knives, for example. Many people discard these altogether and use a fork and a crust of bread to eat their fish by. This is all right, of course, where no knives are provided, but when they are it is best to employ them.

A point which, strange to say, gives many people much trouble is concerned with the correct position of the knife and fork when finished with a course. When engaged in eating meat the knife and fork are rested easily in a crossed position while the diner breaks a piece of bread or chats with a neighbor, but when he is finished the implements are placed side by side on the plate, pointed away from the diner. Surely nothing could well be simpler than this, and yet leaving the knife and fork at right angles to each other, which means that a second helping is desired, when the meal is really ended is one of the very commonest of table errors.

Then, only a fork is required for eating an entree—that is to say, a cutlet, or sweetbreads, or curried chicken, or tripe, or rissoles, or whatever plate is on the menu. The use of a knife where only a fork is required shows you are not "to the manner born."

It is not considered the thing, when eating soup, to drink it from the tip of the spoon, but from the side, and you must not tilt the plate in search of a last spoonful. To add pepper and salt to soup ere tasting it is thought, especially abroad, to reflect seriously on the skill of the cook, who is supposed to have done the flavoring. With pudding, again, the point to be kept in mind is that the fork should be used for all dry or semi-liquid concoctions. You would eat rice pudding with a fork if you had only sugar, as many people do, and no milk.

All sorts of fruit pies, too, and even stewed fruit are eaten with the fork. When the fruit is of the stone variety, like prunes, both fork and spoon are employed, and the fork conveys the stone from the diner's mouth to rest on the ledge of the plate. Dessert is generally a great stumbling block to the awkward diner. I would counsel him to toy with almonds and raisins, or even venture on an apple, but to have nothing to do with the elusive orange, which causes agonies of anxiety in the peeling, and loses all its juices by the time it has been reduced to an edible condition.

It is permissible to finger both bread and biscuits, to break off pieces, butter and eat with the fingers. You handle, asparagus, also, if silver "eaters" are not provided, and celery, of course, is conveyed to the mouth with the fingers. In eating cheese, never use a knife to convey it to the mouth, but put the morsel on the bread or biscuit you are eating and so devour it. Eating cheese with a knife is a very common solecism, and one that never fails to horrify the well-bred.

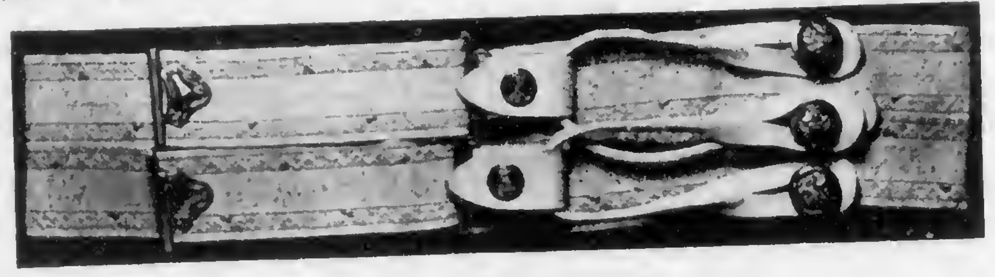
A NOVEL BELT

One of the recent fads adopted by numerous young ladies is that of wearing belts made from suspenders. The elastic quality of the webbing makes them set to the figure in a very satisfactory manner, and every time one is worn it gains a new friend.

A pair of boys' suspenders and three gilt or silver buttons are the requisites. The end of the suspenders which unites the two parts is cut off so as to leave the two halves of the suspenders separate. The slides on the other ends are placed an equal distance from the ends, about three inches usually. The two lengths are then sewed neatly together, the edge of one being laid over the other just a trifle.

A few inches from the end from which a portion had previously been cut the buttons are placed. This point depends upon the waist measure. The buttons should have long shanks in order that they may stand up free from the webbing, and make room for the leather straps of the opposite ends to encircle them readily, as it is by this means that the belt is fastened. The central end of both of these straps is fastened to the middle button, one button being left for each of the remaining straps.

As one can obtain suspenders in a variety of designs and colorings, it is not a difficult matter to match any costume with a belt of this character.—M. Y. M.



FASTENINGS FOR NOVEL BELT.

A DINNER FOR MY NEIGHBOR

Our Domestic Science Class has brought to our knowledge many good things; many of us are farmers' wives and all of us are country folk. Did we not notice the unvarying menu of fried meat, fried potatoes, fried everything on farmers' tables? That is passing; the country woman of today is wide awake: she reads about assimilation, nutrition and balanced ration; she finds that too much fried food is a menace to good digestion, and she looks around for appetizing and nutritious ways of preparing her vegetables and meat, and, very important in our domestic economy, she makes palatable dishes out of leftovers.

Last week I went to the home of a neighbor. I found her quite indisposed and almost unable to prepare the dinner. When I insisted on getting the meal, she told me she really had very little idea of what I would find in the pantry to cook. Dinner time was near at hand, so I ground a little piece of cold soup meat (beef) and put on the fire one cup of rice, covered with two quarts of boiling water. When the rice was well cooked I used this recipe:

Casserole of Rice and Beef.—Two cups of cooked meat, one teaspoon of salt, one-fourth teaspoon of pepper, one-fourth teaspoon of onion juice (or one onion), one tablespoon chopped parsley, one egg, one-third cup bread crumbs (soft), four cups rice (one cup uncooked). The egg is beaten lightly and mixed with the other ingredients. Then place in a covered baking dish and bake half brown.

I pared a few sweet potatoes, placed them in an iron skillet, sprinkled over them some brown sugar and some "frying fat" left from breakfast bacon. The skillet was put on the upper rack in the oven. I had also found some pudding, which I steamed and made the following sauce for it:

One tablespoon of corn starch dissolved in very little cold water. Pour on this a pint of boiling water. Add one cup of sugar, a pinch of salt, a tablespoon of butter and vanilla added when sauce is removed from stove. Any flavoring may be used. Cook thoroly to avoid raw taste.

I put bread and butter, also cranberry sauce or jelly on the table. This is not a dinner based on scientific cooking, but my neighbor's family enjoyed it. It was a meal prepared on the "spur of the moment."—Elizabeth O. Jean.

MANAGING THE DAY'S WORK

Our experience with servants was one long period of suffering. Then I determined to do the work myself, and have proven to my own satisfaction that farm work is no drudgery. First, we had to reconstruct our ideas and methods of living. The men were asked to be more methodical. The irregularity with which so many farmers work is a source of much annoyance to many farmers' wives.

I had always considered farm work very hard, but have found to my delight that it is both healthy and fascinating work. Do you remember how Tom Sawyer whitewashed his fence? To the village boys who passed, it at first seemed dull and irksome, but after Tom had shown them what a delightful, particular, artistic job it was, they were willing to pay for the privilege of wielding the whitewash brush. And so with all work in life. Our mental attitude makes it either a pleasure or a drudgery. I determined to like my work and not to complain about it, or to recite to my friends or neighbors the many things I had done or had on hand to do.

Monday is wash day, so before starting breakfast I soap all my white clothes and put them in to soak, the starched pieces at the bottom, the heavier pieces, as towels, sheets, etc., on top, as these pieces I always wash and scald first, so they will dry as soon as possible. While they are scalding my starched pieces are rubbed. Small pieces, like handkerchiefs, table napkins and collars, I always scald separately and rinse after all the starched pieces are out. I then have no trouble finding them or pulling them out with other pieces. On ironing days I have a box the proper hight for my board, so I may sit while doing at least three-fourths of my ironing.

Each morning, after starting my breakfast, I do my skimming. The men always empty the skimmed-milk after they finish straining the fresh, thus saving me the labor. I then make my dessert for dinner, and often, should the men be a little delayed coming to breakfast, I prepare some of my vegetables. In washing dishes I find there is the right and the wrong way. I scrape and pile my kitchen dishes first, putting all cooking utensils to soak. Then the house dishes are piled on a tray, carried into the kitchen, where they are scraped, sorted and piled to the right of the dishpan, the draining tray being placed to the left. There is no lost motion or exertion in reaching over the pan for dishes.

The milk things are washed first, scalded and put to air. Then the dishes are washed and dried. The cooking utensils are washed, scalded and placed on the stove to dry. I use a soap shaker, which cost five cents, but which has saved its price many times. I use mops for dishwashing. They save time as well as the hands. On churning days, the butter is churned and given the first working before dish washing begins. The dining table is set from one meal to another, saving much time in the handling of glass and silver, as it is placed in order on the table after being cleaned. The dining-room is swept and dusted before the dishes are carried in.

Friday being the regular cleaning day, my work often extends well into the afternoon, but usually I am thru work by two o'clock. At five I start the supper fire, attend to the poultry, and am ready by 5:30 to give the baby his supper and put him to bed. My husband and I have our supper at six, but the men eat later. By nine the day's work is ended, with most of the breakfast ready to go on the stove. With the exception of washing, ironing and sweeping days, the morning work is usually completed by ten o'clock, giving me from one to two hours for sewing.

My downstairs rooms are brushed and dusted every morning, with thoro sweeping on Wednesdays and Fridays. The rooms are usually neat and clean, and there is never a time when I hesitate to invite anyone to a meal. Each afternoon I take from 20 to 30 minutes for rest. My health has been excellent and friends have told me that I look better than I have for years.

I have no worries with servants, am never afraid of anything being spoiled or wasted, and I have found the planning and thought required to accomplish my work very fascinating. Company comes and we joyfully receive them, knowing that there will be no growling over the "extra dishes" to wash. We are free to have whom we please, and our home life is peaceful, for no dark domestic servant problem lurks in the background.—M. M., Delaware.

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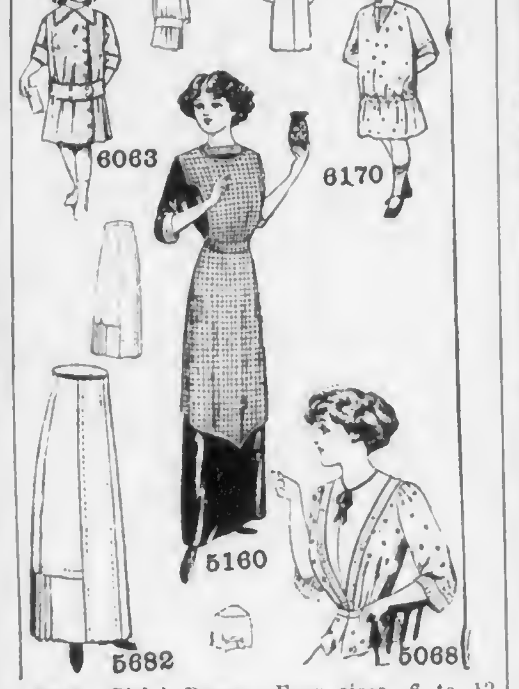

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5068—Ladies' Dressing Sack.—Cut in 7 sizes, 32 to 44 inches, bust measure. Size 36 requires 2⅜ yards of 36-inch material; 4½ yards of edging. Price pattern, 10 cents.

Bulletin 268 of the Bureau of Plant Industry, Washington, D. C., contains a very complete discussion of various methods of marketing tobacco at different centers. Baltimore, Danville and other important tobacco markets are discussed as to their marketing systems, the advantages and disadvantages of them, etc. Much valuable information is given. The bulletin is sent free upon request to the above bureau.

New Jersey Short Courses Close.—The closing exercises of the short courses in agriculture at Rutgers College, New Jersey, were held February 28. A pleasing and instructive program was given. There were 181 students enrolled in this year's courses, and the school the best ever held.

Variations in the Composition of Milk.—It is a well known fact that the composition of milk, at least as to the percentage of fat, varies constantly in the same cow. Among the causes that are usually assigned for these variations is the influence of weather conditions, changes in health of the animal, change in milkers, unusual excitement of any kind, and, to some extent, changes in feed. This subject is discussed at length in Bulletin 157, Bureau of Animal Industry, Washington, D. C. The bulletin is sent free upon request.

COUNTY NOTES

Montour Co., Pa. (C.), Feb. 18.—Weather fine; temperature ranging from 12 degrees to 50 degrees. Pork, 9c; beef, side, 9c; wheat, $1; oats, 45c; potatoes, 70c; cabbage, 60c; hay, $16; milch cows, $45@70; horses, $150 to 250; eggs, 20c; butter, 35c. Lime hauling well under way. Ice gathered in last few days. Work in good shape.—Benj L. Diehl.

Montgomery Co., Md. (C.), Feb. 18.—Extremely open winter until February 4th; much ice since. Live stock, poultry, etc., selling above average for this season of the year. Dairymen experiencing considerable difficulty with Washington Health Department; tuberculosis in many herds. Corn, $4 bbl.; wheat, $1; eggs, 20c. Much plowing for corn completed. Wheat looking extra well. Hay very cheap on market. Fruit trees injured by warm spell.—S. D. Gray.

Montgomery Co., N. Y. (E. C.), Feb. 28.—Cold wave, followed by warmer and rains. Hay, $12, farmers holding for higher prices; eggs, 22c. Pork scarce and high. Ice houses nearly all filled last week. Farmers sawing firewood. Cheese factories will be well patronized this year. New grange at Hallsville. Board of Supervisors considering the establishment of a farm bureau. County will build a new jail and a tuberculosis hospital. Farmers favor the law requiring commission men to give security. Many farmers insuring buildings in the grange company. Everybody busy and generally happy.—John L. England.

Juniata Co., Pa. (C.), Feb. 28.—Mild winter; little snow or rain. Stock in good health and condition. Winter grain looking fine. Cows, $50@70; beef, 10c, dressed; pork, 9c; eggs, 20c; butter, 30c; wheat, $1; oats, 40c; corn, 65c. Two weeks' hard freezing made ice. Ice houses all filled. Not much doing but care of stock.—D. B. Esh.

Venango Co., Pa. (N. W.), Mar. 1.—Storming. February cold and stormy. Very little snow. Stock looking good. No snow, with hard freezing, has been severe on crops. Prices have changed but little during February. Many public sales of farms and personal property advertised for March. Farm work well along and indications are that a

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full acreage will be planted in the spring. General conditions are fair.—W. J. Pringle.

Steuben Co., N. Y. (S. W.), Feb. 28.—Stormy, but no snow to make sleighing this winter. Stock looks good. Cows, $45@65; a few changing hands. Horses, $100@200 each; butter, 35c; eggs, 18c at store; hay, $10 to $12 ton; potatoes, 44c at car. Farm work at a standstill. Roads bad in general.—G. W. Rowley.

Northumberland Co., Pa. (C.), Mar. 1.—Weather mild, with rain; roads in bad condition. Stock in fair condition, and cattle high in price. Grain looks fairly good. Butter, 34c; eggs, 20c. But little pork sold just now. Many moving now and lots of public sales. Farmers planning work and getting implements in shape for work; also ordering seeds.—George A. Hockley.

Fayette Co., Pa. (S. W.), Feb. 21.—Weather continues cold. Live stock doing well and stock of all kinds in good demand. Steers all sold. Much inquiry for fat cattle. Wheat fields bare and look bad. Clover seed, $12 to $13.50; timothy, $2.50. No plowing done this month, and but little last month. Farmors are busy hauling coal, sawlogs and manure. Many are hauling wheat to market at $1.05 per bu. Not much ice stored yet. Some are pruning orchards and getting ready to spray trees.—S. A. Harris.

Centre Co., Pa. (C.), Feb. 19.—Weather summer-like; have had but five snow flurries. No sleighing but about 8 inches of ice. Horses, $100@275 each; colts, $75@100; fresh cows, $40@80; fat cattle, 7@8c, live weight; pork, 9@10c, butter, 35c; corn, shelled, 60c cwt.; oats, 45c; apples, $1; potatoes, 90c; veal calves, 8c. Work well up; some plowing done. Wheat in general looking well.—W. H. Fry.

York Co., Pa. (S. E.), Mar. 3.—Weather normal, with a slight surplus of precipitation. Beef and dairy cattle scarce and high in price. Fat hogs, 9@10c lb., dressed.; pigs, $5@6 pair; chickens, 13c lb., live weight; wheat, $1.02 bu.; corn, 55c bu; eggs, 20c; butter, country, 32@36c; separator, 33@37c. Butchering nearly all done. Farmers are also nearly thru stripping tobacco. Some busy hauling manure.—Clarence D. Emig.

Veterinary

(Conducted by W. C. Fair, V. S.)

(Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also name and address of writer. Initials only will be published. When reply by mail is requested, it becomes private practice, and a fee of $1 must accompany the letter. This is one of the most valuable columns of the paper and we invite readers to make use of it. Clippings from this column, when properly preserved and classified, would make one of the most valuable medical symposiums a farmer-stockman could obtain.)

Five Teats.—I have a heifer that came fresh last fall which has five teats. Two of them are very close together. I have been advised to tie a string tightly around teat and keep it on until it falls off, but before doing so I ask your advise. G. J. D., Gans, Pa.—In my practice I usually cut off teat, stitch wound and apply equal parts powdered alum, oxide zinc and boracic acid to wound, twice a day. When the owner prefers to have little trouble with it, I clean teat and tie silk string around teat close to bag and allow it to slough off. Apply 1 part carbolic acid and 3 parts water to wound made, twice a day. Cutting the teat off is the best treatment.

Crooked Tail.—I have a driving horse that is inclined to carry his tail to one side. Is there any way that I can prevent this habit? Y. E. R. Idaville, Pa.—There are two different methods in operating to straighten a crooked tail. I have obtained the best results by cutting the muscles on the side on which the tail crooks, then tying tail to a surcingle and keeping it thus tied to side for 10 days or two weeks. By this method granulations are thrown out on the ends of the divided muscles, they lengthen and the tail will be carried straight. The other method is to remove a section of the long muscles and then let ends unite.

Septic Infection.—I have had several colts die before they were 24 hours old. They have good care and I can not account for their death. B. D. W., Gwynedd, Pa.—Your colts die of navel infection. The cord should be tied with a silk or linen thread, one inch from body. Then apply hydrogen peroxide twice a day, and dust with powder composed of 1 part oxide of zinc and 4 parts boracic acid.

Crib-biting.—My 10-year-old mare is healthy and in fine condition, but is a cribber. Is there a cure for an ailment of this sort? M. A. S., Gans, Pa.—This ailment is incurable. To prevent it, remove the manger and let mare eat off floor out of shallow, oval feed box. When you hitch her, muzzle her. Give her a teaspoonful cooking soda in feed, 3 times a day.

Hard Milker—Large Teats.—My cow's fore teats are large and long, but hole seems to be too small. There seems to be no obstructions in teats. Can you suggest a remedy that will make it easier for me to milk her? I. S. W., West Dublin, Pa.—Nothing can be done to reduce size of teat, but presume it is necessary to squeeze them hard while milking, which may have caused them to swell and gradually enlarge. Dilate teat opening with a polished steel, dull-pointed probe, or regular teat opening expander.

Cold Abscess on Neck.—A cow, 5 years old, has a large bunch on right side of neck, near shoulder. I have applied an ointment, but this fails to reduce the bunch. T. E. R., Williamstown, Pa.—The bunch should be cut open, for the center is doubtless filled with pus; then inject 1 part carbolic acid and 30 parts water, twice a day. I frequently inject such bunches with tincture iodine once or twice after they are opened.

Sprained Tendon.—I have a horse 12 years old, that that has been driven on road a great deal. He is lame in back tendon of hind leg. When starting he is very lame, but gradually gets better after going a mile or two. I have blistered leg several times and applied other home remedies, with rather poor results. How can I cure him? J. B. R., Osterhout, Pa.—I am inclined to believe that he may be lame from a spavin, because he warms out of his lameness. Apply 1 part red iodide mercury and 8 parts cerate of cantharides to inner and fore part of hock and back tendon, every week or 10 days. If after a few weeks' treatment he fails to show improvement, then have him fired.

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PENNSYLVANIA FARMER
AGRICULTURE THE KEYSTONE OF NATIONAL PROSPERITY
ESTABLISHED 1880 P[illegible]SHED WEEKLY
VOL. 33.—No. 12. PHILADELPHIA, PA., SATURDAY, MARCH 22, 1913. 50 CENTS A YEAR.

Grass Meadows---How To Handle Them

By E. R. Minns,

Cornell University, N. Y.

The hay crop, including both grasses and clovers, is so commonplace a subject as to cause less thought and study on the part of average farmers than the newer or less important crops which appeal more to the imagination. The large acreage of hay in the eastern states is a matter of course to the ordinary observer. We have to read some of the hay statistics in order to awaken imagination. Uncle Sam's hay crop for the last four years has averaged 49,981,000 acres. In New York, the average acreage for the same four years was 4,735,000. Pennsylvania averaged 3,068,000 acres in hay during the same period. Both New York and Pennsylvania averaged lower in yield but higher in value per acre than the United States, as is here evidenced:

	Tons Per Acre.	Value Per Acre.
United States	1.33	$16.20
New York	1.17	17.76
Pennsylvania	1.22	19.89

Because hay is a bulky crop it is not transported as cheaply as the grains, and so the eastern farmer has less competition in the large markets, and his hay crop is worth more to sell than that of his western competitor. In New York, at least, a large part of the annual hay crop is composed of mixed clovers and grasses which are not intended for the market but for the feeding of farm animals. This hay goes to market as milk or meat, if it may be said to go there at all. Some of it is used by the farm work horse to produce energy for the work of growing other crops.

On some farms the hay crop is sold yearly without regard to the effect on the soil fertility. The practice of using the grass crop as a means of getting all possible out of the farm without returning an equivalent to maintain soil fertility is a common practice which is responsible for the run down condition of many of the cheaper classes of farms. On others, the owners are religiously feeding all the forage they can raise, on the theory that such a practice is essential to keeping up soil fertility. These extremes are both wrong. One is robbing the future for a temporary gain, while the other is sacrificing the present in the confident hope of future gain or permanence of the system.

The price of timothy hay in recent years has been out of proportion to its feeding value. Is it good economy to feed $15 hay to produce 3½ cent milk? Would it not be better to keep less stock, sell some hay and buy some plant foods in a concentrated form to replace those removed in the hay sold? I may be wrong in my assumption, but a comparison of acre values seems to say that the margin of profit on timothy hay sold to city markets is greater and the risks smaller than those on several other eastern cash crops. I have no accurate figures to back up my statement, but to the best of my knowledge and experience, grass hay costs the least to produce of any of our staple crops when the acre is the unit. The table on next page shows the average acreage, yield, and value per acre of the principal farm crops of Pennsylvania.

A GOOD MEADOW CROP.

This field was made to yield 3 1-8 tons per acre by top dressing in the spring with home-mixed fertilizer made up of 200 lbs. nitrate of soda, 100 lbs. acid phosphate and 50 lbs. muriate of potash per acre.

Here it is seen that with the exception of corn and potatoes, the acre value of hay exceeds that of the other crops noted. Everyone will understand that it costs considerably more to grow a crop of corn or potatoes than it does a crop of hay. Few farmers seem to realize that more than average grass hay crops can be easily produced without the necessity of putting all the manure and fertilizers on the other crops in the rotation. If all the market hay growers should practice what I am about to advocate the hay market would be demoralized by over-production, but I do not fear that. My appeal is to the few who read agricultural papers and really study the economy of crop production.

Let me assume that the reader knows the best practice for seeding a new meadow on his farm. It is sometimes said that the way to produce a good man is to begin with his grandmother. It may be necessary to begin with the preceding crops in order to get a good stand of grass plants on a meadow. It may mean the restoration of humus, or plant food, or even lime to the plundered soil while growing the previous crops, in order that grasses may take courage enough to cover the ground. With a stand of grass assured, what can be done to maintain it and make it produce more than average crops yearly?

We have to recognize the fact that grasses, especially timothy, are nitrogen-hungry plants. The growth of leaf and stem is what we want in a hay crop. Nitrogen of an available sort is likely to be the most limiting factor on our grass lands. Available potash and phosphorus may not be abundant enough for full crops. The feeding ground of grass roots is more limited than that of clovers. The available plant food for grasses must be near the surface to be most effective.

GASOLINE TRACTOR AT WORK ON FARM OF EDWARD NOTESTINE, MIFFLIN CO., PA.

See Note, Page 2.

Another important fact which has recently been shown by experiment is this: Under a crop of timothy on a clay loam soil a lower percentage of nitrates was found than under a crop of corn on the same soil during the growing season. Both crops have a large nitrogen requirement, but some subtle influence depresses the nitrate formation under the timothy, thus making it more important to feed it nitrogen to get full crops.

In a series of experiments with fertilizers on timothy plats for a period of three years, it has been shown that nitrate of soda, acid phosphate and muriate of potash, applied singly or in combinations, produced increased yields which were large enough to more than pay for the fertilizers. The results from using a single fertilizer ingredient were variable, nitrate of soda producing the largest increase in hay, but muriate of potash showing the greatest total gain in value above cost of fertilizers used. The complete fertilizers made up of these materials showed greater gains and were more profitable to apply.

There was some evidence that the complete fertilizers used did not provide these plant foods in the correct proportions for timothy; therefore a special grass fertilizer made up of 200 lbs. nitrate of soda, 100 lbs. acid phosphate and 50 lbs. muriate of potash was recommended for an acre of clay loam soil growing timothy. The time to apply this very soluable and available fertilizer is in the spring, just before the grass starts its growth. The first rain following the application dissolves the fertilizers and carries the solution into the soil, just where the grass roots are waiting for it. If the rain is dashing and very heavy, of course some of this soluble plant food may be washed away, but this seldom happens on sod.

In the experiments above referred to, the fertilizers were applied each spring after the meadow had been established. As a practical test of the fertilizer formula recommended, an excellent meadow on the same soil type was fertilized for three successive years with from 300 to 350 lbs. of this special fertilizer, applied in April or early May. The application was made with a fertilizer distributer which is drawn by two horses. The first application brought a phenomenal yield of rather coarse hay. It was the third crop on this meadow, but it weighed 3.13 tons per acre. The following year the fertilizer application was repeated rather late in the spring, owing to hindrances. The yield was 2.67 tons per acre. The local price of this hay was $15 from the field that year. The fertilizer application was worth $7. The cost of handling the crop was approximately $4 per ton.

Pennsylvania Crop Figures

	Acres.	Yield Per Acre.	Value Per Acre.
Hay	3,068,000	1.22 T.	$19.89 T.
Corn	1,424,000	39.5 Bu.	25.67 Bu.
Wheat	1,266,000	16.7 "	16.20 "
Oats	1,127,000	30.4 "	13.83 "
Buckwheat	295,000	20.5 "	13.48 "
Potatoes	267,000	67 "	56.28 "

The third yearly application of fertilizer produced a crop about equal to the second one. During the fourth and fifth seasons it became evident that the meadow ought to be plowed in order to rid it of a considerable number of perennial weeds. In spite of this condition, the use of the fertilizer seemed profitable. This meadow was well adapted to the demonstration because the soil was in as good tilth as any part of the farm and there was a good stand of grass plants to feed.

Included with the fertilizer plats previously referred to were two plats manured with 10 and 20 tons of barnyard manure per acre, twice during the period of three years. The crop yields resulting from this kind of treatment were very favorable. Ten tons of manure produced nearly as much increase in the hay crop as did 720 lbs. of expensive complete fertilizer. Twenty tons of manure per acre did not produce twice as much crop increase as did ten tons, but the rate of increase was nearly two and one-half times the yield where no feeding of the crop was done. One application of this manure was made when preparing the seed bed. That was equivalent to the practice of top-dressing fields before sowing winter grains. The other application was made on the timothy sod in the autumn.

The good results obtained from using complete chemical fertilizers can be attributed to the placing of available plant food where the grass could use it at an opportune time. With the barnyard manure, that is only part of the story. Manure furnishes protection from freezing in winter and drouth in summer. Its soluble plant food is leached out into the soil and the fiber acts as a blanket or sponge for holding the moisture near the surface, where the grass roots are. The practice of top-dressing meadows with barnyard manure has gained rapidly in favor since the development of the manure spreader. On some farms the discovery that the grass crop paid the best returns for the use of manure has made a revolution in the practice of handling this by-product of the stable. Light applications of fresh manure from tight gutters at any time from harvest until spring opens are bound to help the next grass crop, and the residues left on the sod are effective for the next crop in the rotation.

Manured or fertilized sods, when plowed under for corn, produce much better corn as a result of the residual effect of the feeding. There is a better sod to plow than where no feeding is practiced, and there are fertilizer residues suited to the corn crop. Altho a meadow may be maintained for an indefinite period of years by top-dressing with barnyard manure and adding a little grass seed, and altho chemical fertilizers may give profitable yields of hay for several years in succession, good soil sanitation demands a rotation of crops for the surest results. Fertilizers and manure will enable one to lengthen the rotation so as to allow more years of hay cropping, but this should not be carried beyond four years of hay in succession. In a six or seven-year rotation, more profit can be had at present prices by feeding the grass crop liberally than by any other use of the fertilizers or manure.

GASOLINE TRACTOR FOR FARM WORK IN PENNSYLVANIA

Gasoline traction engines have been used for some time in the West for general farm work, but Edward Notestine, a progressive farmer of Mifflin County, is the first man to demonstrate their use for farm work in Pennsylvania. When Mr. Notestine purchased this tractor and gave out the information that he would use it for plowing, cutting his wheat and other crops, and for other work on the farm, many farmers in this section were of the opinion that the use of the traction engine for farm work in this state was out of the question. Mr. Notestine, with the engine and a plow that turned four furrows at a time, set to work to do all his spring plowing. It worked to perfection. He cut his wheat and other crops last summer and hauled them to the barn with this power, and did his fall plowing with it as well. He is satisfied with the experiment, as it has proved a success, both in use on hilly and on level ground. The tractor used was of 20 horse-power. Mr. Notestine operates a large farm and is one of the most progressive and best-known farmers in central Pennsylvania. The engine in use weighs about 12,300 lbs.—E. E. Claspby, Mifflin Co., Pa.

HOW I HAVE IMPROVED MY CORN CROP

For the past six years I have made a special effort to select varieties that produce good silage and mature sound grain. In this latitude Leaming, Pride of the North and Clark's Early Mastodon make better silage and mature more sound ears than varieties that require a longer growing season. To intensify early maturing tendencies and enable us to examine the character of the stalk as well as the ear that is attached to it, we select seed from the field about the middle of September. This gives us corn that will make good silage and mature sound grain during a normal growing season. By careful seed selection we have gradually intensified the early maturing of our corn until it is possible to mature nearly a full crop of dent corn in this latutude.

In selecting seed from the field one should not persist in selecting ears simply because they are big. I find the profitable limit to the size of the ears is as large as will mature on my farm. By selecting ears that have reached a fair maturity before it is time to harvest the main crop I find that they may have a great length and depth of grain, but never as large cob as the seemingly large ears that mature later, or as those that are not mature after heavy forsts. The bigness or circumference of the cob is a safe guide of the length of season required to mature. In my experience there is no limit to the length of the cob, provided its circumference is as the length of the season. I bring up this point because it is very important that every corn grower keep the size of the ear adapted to his soil and climate. After one has selected his variety and finds that it suits his soil, latitude and requirements, then he should aim to grow as big ears and no larger than will make a maxnmim crop of sound corn.

We store the seed ears in a frame covered with fine mesh wire and equipped with shelves made of slats and poultry wire. This allows a free air circulation and protects the corn from rats and mice. The rack is in the attic, where the heat from the chimney helps to dry the moisture from the corn before cold weather reduces its germinating powers. It is very essential that early selected seed corn be dried properly before cold weather comes.

Fertilizing and Preparing the Corn Field

Large crops can not be grown on impoverished, poorly prepared soils. Our main crops are corn, potatoes, clover and wheat, the bulk of the manure being applied to the clover and timothy sod and plowed under for the corn crop. Corn makes the best use of the fertilizing materials in manure, because it makes its greatest growth late in the season after these elements are available. A light application of manure on sod ground will provide nitrogen for the crop early in the season and the bacteria in the manure, after completing their work of making its plant food available, will seize upon the organic matter of the roots and stubble and hesten its decomposition, thus providing plenty of nitrogen at all times for the corn crop. Large crops may be grown by the use of manure alone, but I find that it pays better to apply the manure moderately and reinforce it with fertilizers rich in phosphoric acid and potash. In this way the manure covers more acres and we are able to grow larger crops of clover or mixed hay and we have a more substantial base of humus to last during the crop rotation.

Every year adds to my opinion of the value of early plowing and cultivation of the corn ground. As a rule we do not get maximum benefits from the organic matter plowed under for the crop because we neglect to properly prepare the land before planting. Manure decomposes rapidly, but not so with the green weeds, stubble and roots. It takes time for them to die, and even after they are dormant, it takes considerable time for decomposition to take place. On the other hand, if the ground is plowed early and thoroly worked a number of times before planting, an ideal seed bed will be established and much of the fertility will be made available by the time the crop has matured sufficiently to make profitable use of it.

Planting and Cultivating the Corn Crop

The corn crop requires an abundance of air, light and sunshine, and for that reason it is my judgment that it is profitable to plant it in check rows from three feet to three feet six inches each way. In this way practically all of the work may be done with sulky cultivators, and very little hand-hoeing will be required to keep the field free from weeds. . When weather and soil conditions are right we begin planting corn about the tenth of May.

Immediately after planting we go over the field with light smoothing harrows. The methods of cultivation depend a great deal on the weather. If moisture conditions are right and the weather right for the germination and growth of the crop and the field is free from weeds, it is not necessary to begin cultivation until it is time to start the cultivators. If the soil is dry and contains an abundance of humus, rolling and harrowing will compact the surface and assist in establishing capillary connection with the subsoil, thus bringing up moisture within reach of the plants. Sandy soils are not benefited by rolling, because it results in a loss of moisture to the field.

When the rows show plainly the cultivators should be started. At first, the cultivation should be deep and the fenders adjusted so as to prevent covering the plants. The second cultivation should be more shallow, and subsequent cultivations very shallow. We have two sets of teeth with each cultivator: one set of large teeth to give the soil a thoro stirring before the corn roots take possession of the ground, and a set of spring teeth that can be run shallow later in the season as the crop takes possession of the soil between the rows.

Three results are gained by cultivation, i. e., killing the weeds, making plant food available and preventing the evaporation of soil moisture. The killing of weeds is very important: they exact a heavy toll when they gain a foothold in the field. Manipulating the soil reduces and refines the particles and makes plant food available. A man should use the fertility already in the soil before buying more to stimulate crop growth. Intense cultivation develops a wonderful amount of plant food.

Next is conserving soil moisture. We all know better than we do. Experience teaches us that moisture has a limiting effect on the yield of corn. Tillage is the most successful means of combating the serious effects which follow long drouths. The proper way for us to check loss of moisture is to keep a mulch of loose soil on the surface by frequent shallow cultivation. During a wet season this requires more frequent cultivation to prevent a hard crust forming on the surface after every rain. We have no fixed time for putting away the corn crop for the year. Cultivation is kept up as long as we can get thru the field without damaging the crop. Cultivating a fixed number of times, or up to a certain day of the month and putting the cultivators away for the year, does not measure up to the demands of present-day corn growing.

How much have I increased my crop yields during this time? Well, that is a difficult question to answer in dollars and cents, or bushels. I am able to grow dent corn in place of flint. A few years ago it required all the corn we could raise to fill our two 14x32 ft. silos. The past three years we have filled them from a similar acreage, besides husking and shredding eight or ten acres and saving more than a thousand bushels of ear corn to feed hogs. In estimating the increased profits from selecting better seed and making a better use of manure, fertilizer and labor we have added more than six hundred dollars to the value of our corn crop.

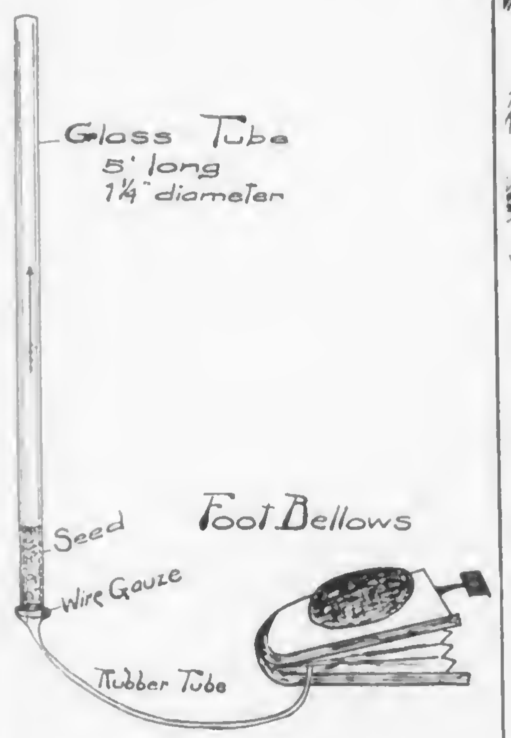
This is taking into account the value of the shredded stover, the increased value of the silage and the additional quantity of manure made from the dairy herd. We raise about 22 acres of corn annually, keep 28 dairy cows and from 20 to 30 hogs during the larger portion of the year.—W. Milton Kelly, Erie Co., N. Y.

GOOD TOBACCO SEED

By E. K. Hibshman

The time is rapidly approaching when the tobacco grower will begin to think about the seed for the next year's crop. It is a peculiar fact that the seed of such a high priced crop as tobacco should be so remarkably cheap. The small sum of 15 or 20 cents will purchase sufficient seed to plant 10 to 12 acres. This cheapness of seed is no doubt due to the fact that a tobacco plant produces seed very prolifically, a single plant of the Pennsylvania broad leaf variety producing as high as several millions of seeds.

In one respect this prolific development of seed is a rather deplorable fact, because it makes it very easy to produce tobacco seed, and consequently very little attention is given to it. In many cases a very inferior seed is pro duced and sown. Farmers are generally willing to pay an extra price for good seed corn or good seed wheat, but they would hesitate a long time before they would be willing to pay several dollars an acre for good tobacco seed, and yet the tobacco crop would pay them several times the profit that would corn or wheat. When he is selecting a seed stalk or is purchasing seed, the tobacco grower does not realize what the value of that seed will be a year later when it has grown a crop of tobacco, and that a little difference in the quality of the seed may mean a difference of several hundred dollars when the crop is sold.



TOBACCO SEED TESTING APPARATUS

Most farmers are careful to have their seed wheat good and clean; in fact, many send it to a mill to have it cleaned. This cleaning removes the small, broken and shriveled grains and leaves only the plump, good ones. Tobacco seed can be cleaned in the same way. There are small, light, immature seeds which should be separated out. The light, immature tobacco seed possesses vitality and will produce a plant in the seed bed but will not produce so strong and vigorous a plant as the larger and heavier seed.

Tobacco seed can very easily be cleaned by the use of a very simple machine consisting of an upright glass tube about five feet in length and about one and a quarter inches in diameter, with a very fine wire gauze fastened over the bottom. When the seed is poured into the top of the tube the fine wire gauze prevents it from running out at the bottom. A foot bellows is attached to the bottom of the glass tube by means of a small rubber hose and a blast of air is forced upward thru the seed and thru the glass tube. This blast of air is made strong enough to carry with it the light, immature seeds but leaves behind on the wire gauze the heavier and well developed seeds.

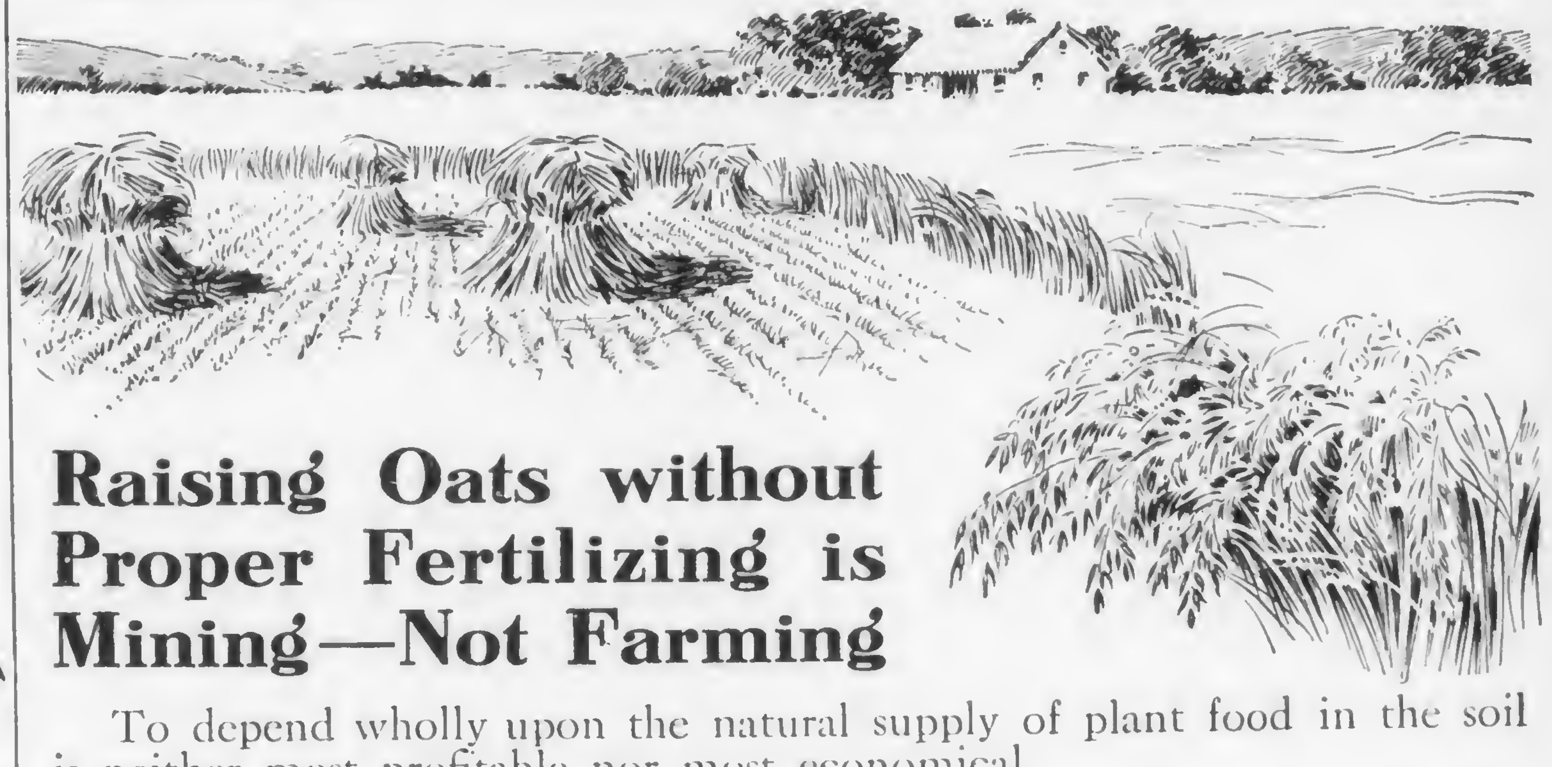
The illustration shows the construction of the machine and illustrates the principle of its operation.

LANCASTER COUNTY FARM BUREAU

Opinions differ so greatly as to the kind of service that will benefit the farmers that it seems somewhat of a proposition to establish any kind of farm organization with success. But the county bureau system just starting in this county promises to assist in so many ways that I can not see how we can afford to miss it. The membership fee is only $1 per year, and the privileges under membership are many. Our county agent has had the scientific training, and has also served his apprenticeship in practical work, having held the plow and picked the wheat beards from his underclothing on a farm right herein our own county.

With state and government aid, together with what is being raised by our business and professional men, we are starting with $2,700 for the work. But 59 members at $1 each as a membership fee is a small number in view of the benefits to be received. In my work of soliciting additional members I had all kinds of excuses. Some have no faith in the system and say so. Others profess to believe that it is merely a move to provide positions for men who are not fitted for farm work. This is the wrong spirit. When we consider the small amount of the membership fee, we must concede that it is a poor sort of a member who can not get profitable returns from his investment. Our superintendent is supposed to make soil analyses when requested and help solve the problems of what is needed for soil building and fertility. If we must pay a little money to follow any of this advice it will be worth while in the increased returns. I made a test last year in fertilization under the Lancaster County Tobacco Growers' Association. I made this test under the suggestion of a government expert, and I doubled my yield of tobacco thru it. It was thru the combination of certain commercial fertilizers with barnyard manures, but we applied the right goods in the right place.

We expect this year in our county bureau work to go to the farms of our members and germinate their seed corn, analyze their soil or give any other instruction required, free of charge. Show rooms will be maintained at the county seat for the exhibition of all kinds of farm products, results of various methods, experiments, etc. We are also looking forward to county farmers' weeks, such as are held for the state by the State College. The office of the superintendent will be equipped with both telephones, so that all membrs may be within easy call of headquarters at all times. Any farmer in the county may become a member by sending name and membership fee to the Secretary, County Farm Bureau, Lititz, Pa., or to any member of the organization committee.—F. M. Stevenson, Lancaster Co., Pa.


Raising Oats without Proper Fertilizing is Mining—Not Farming

To depend wholly upon the natural supply of plant food in the soil is neither most profitable nor most economical.

Oats take from your land more potash than phosphoric acid or nitrogen. You must supplement the supply of available soil

POTASH

by a fertilizer rich in this element, or your harvest may not pay you for your labor.

Potash Pays in heavier heads, better grade, a greater proportion of grain to straw, and freedom from lodging. Balance the phosphate and nitrogen with 6 to 8% of potash.

Poor crops of oats are often due to rust. Potash gives the plants vigor to resist the rust fungus. Available potash is needed as soon as the oats germinate.

Drill in with the seed 300 to 400 pounds per acre of a 3-8-6 or 3-8-8 goods and provide the available plant food for the young plants before the soil supply becomes soluble.

This is an insurance against no crop in bad years.

The old 1-7-1 and 2-8-2 formulas are not up-to-date. They belong to the preliminary, not to the permanent, stage of profitable fertilizing.

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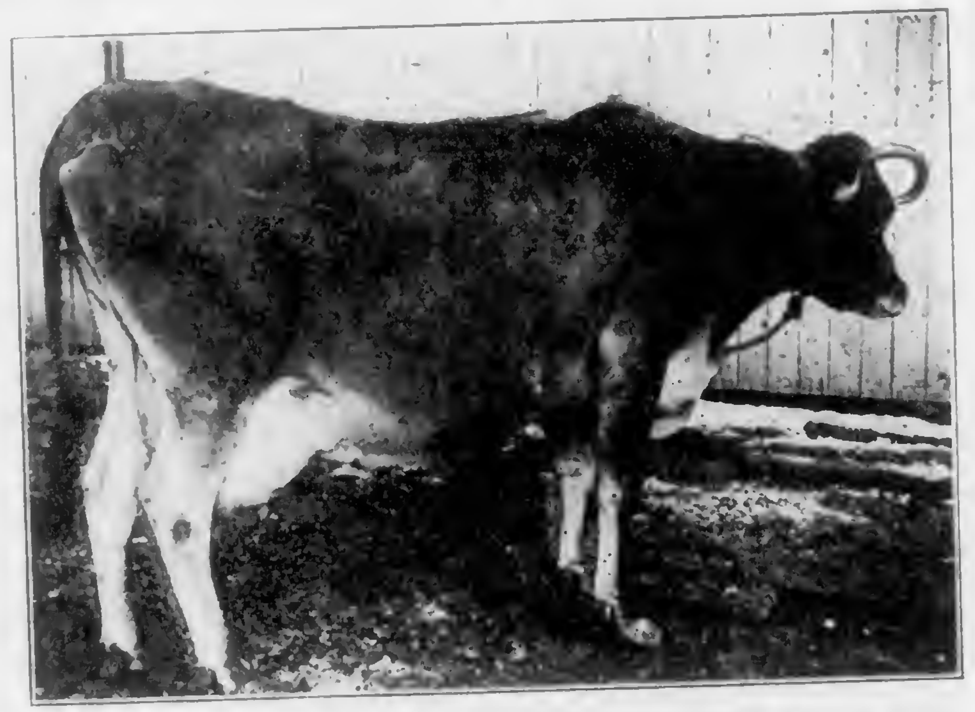
The Dairy

ONE REASON FOR SCARCITY OF GOOD DAIRY COWS

One need not look back more than from eight to ten years, and comparing the prices paid for good dairy cows then with those that we are compelled to pay for cattle of equal merit today, it will be noticed that the price has almost if not quite doubled. There are, of course, many things that have helped to bring about this change, but one of the greatest is the practice, by some dairymen, of not breeding their their herd are greatly lessened. Oftentimes a cow will not do as well the first year, right after being shipped, and if she were kept would greatly increase her yield the second milking period. In the second place, it is next to impossible to keep your herd free from disease when cattle are being constantly bought from drove stock. These men, too, must often buy cows which are of inferior dairy type, simply for the sake of being able to fatten them, and thus lose out again over the man who buys a strictly dairy type and keeps her year after year. The latter is willing to look to her milk production for his profit, and when she must be disposed of he can afford to let her go for what she will bring. If the ob-



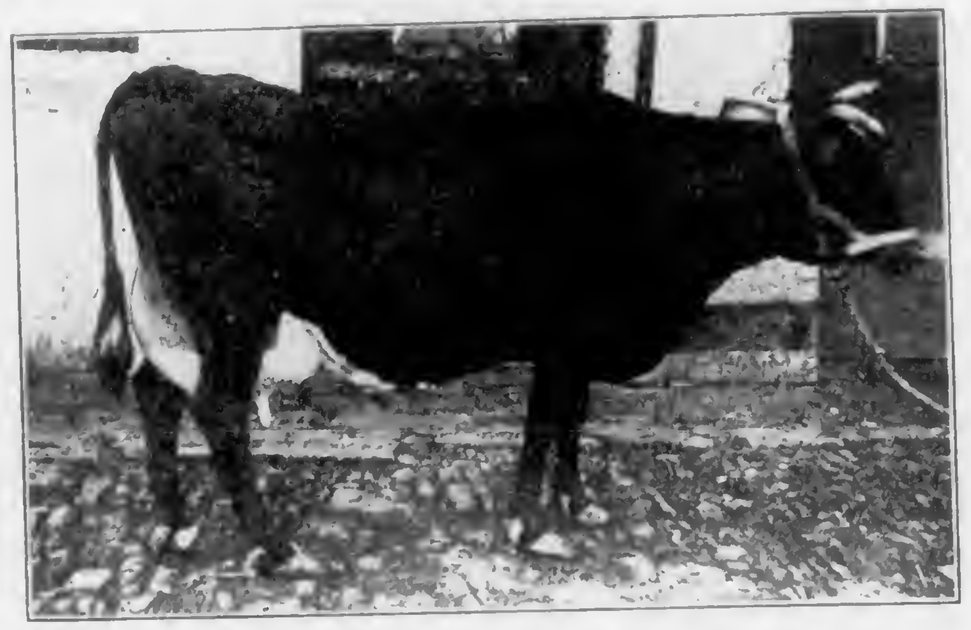
A 16 YEAR OLD JERSEY. HAS PRODUCED 13 CALVES AND IS STILL A PROFITABLE COW.

cows, but simply milking them as long as possible, by which time they expect to have them fat and then sell them to the butcher, regardless of their productive ability.

This practice is followed by some of the leading dairymen in the eastern part of the state (not including registered dairies) and the fact that their entire herds must be replaced about every year naturally increases the demand for dairy cows in this part of the state. Hundreds and hundreds of carloads of dairy cows have been shipped into this part of the state within the last number of years, until the supply

ject of those farmers is to produce beef, they had better buy beef breeds, as they will produce beef more economically and at the same time demand a better price. If they wish to make their money from the milk, they had better buy dairy cows, which will make milk more economically, and then by keeping them year after year, breeding them to a good bull and raising the calves, they should have no trouble in improving their herd within a few years' time.

The illustrations shown on this page are those of two Jerseys, one a 16-year-old. She has provided 13 strong,



A 12-YEAR-OLD GRADE. ONE OF THE KIND THAT IT PAYS TO KEEP AND BREED FROM.

is becoming limited, and still the demand and prices are greater than ever before. Altho there may be exceptions I hold that this practice is one of the causes for the high price of dairy cattle in our part of the state, and furthermore that it is not practical in the majority of cases where it is done, for several reasons.

In the first place, in selling off their cows and buying new, dairymen are taking a great chance of getting inferior stock, or at least the chances of their improving the average yield of

healthy calves and has, up to within the last few years, given 20 quarts of milk daily when fresh, testing 5 percent fat. She is still a profitable cow. The other is a 12-year-old, and has given 50 pounds of milk a day. She is at present giving from 42 to 45 pounds, testing 4.30 percent fat. The picture does not show her udder at its best, as her calf had sucked considerable just before the picture was taken.

These cows are good examples of the kind it pays to keep and breed, as they will produce milk more economically and make their owner more money than any so-called dual-purpose cows that can be bought.—Amos K. Rothenberger, Bucks Co., Pa.

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THE IMPERISHABLE SILO

OLD TIME IDEAS IN THE DAIRY.

When I was a child there were not so many farm papers as now, yet I remember that the few coming into our home were treasured. In those days, in farm advice we mainly relied on tradition and our own experience. This last often cost us very dearly in sheep, cows and horses, as well as hogs. In fact, we then seemed helpless against any loss thru epidemic disease. Advice there was little, and veterinary help far away.

I began doing really more than my share of milking while very young. Boys in our family were not taught to milk. This was work for girls, and girls were most plentiful with us. Jersey cows we knew of, but my mother preferred the big Durham cows that gave two wooden bucketfuls of milk at a milking when fresh, and a wooden bucketful nearly up to the last of the "stripping" times. To this day I can not but think that there was no milk so good, and no butter so solid and peculiarly sweet of taste as that from our Durham cows.

Some of our old-time axioms were that certain feeds made butter come more solid. We spared the cows all the potatoes we dared, because we believed the butter from potato-fed cows was firm butter. Pumpkins made the butter yellow, and corn blades and bran increased the flow of milk greatly. Corn in the ear fattened the cow, but if fed heavily dried up the milk. Clover in my grandfather's time was considered dangerous. In my time we had learned better than this, but kept the cows out of the wet clover.

The milk from a cow at the stripping state was hard to churn. The butter did not want to gather at all. We were glad when we could add the milk of but one other cow to it. If the milk frothed and fumed and despite long churning brought no butter, we wondered if the cows had not been eating straw from out the manure pile. Some cows will leave good feed to do this. I think yet there was reason in the claim that it would hurt the milk.

We were careful to keep our cows from where hogs had munched over corn stalks. This was thought to give our cattle some disease. They were closely watched from the sorgum patches. We did not know why, but we knew that to allow a cow her free will in the sweet canes meant death for her. Prussic acid in the stalk is now thought to be the reason. No wild cherry trees were allowed to grow in the fields or wood pastures, as, at times, some of the cattle would be sure to eat the fallen leaves, and this usually meant death to them. Buckeye trees were also thinned out of the wood's pasture.—Ida Shepler, Indiana.

RETENTION OF AFTERBIRTH

Among the troubles with which the dairy farmer has to contend is one at calving time—the retention of the afterbirth. The causes may be of several kinds. The cow may be in a run-down condition, either from lack of sufficient feed or other cause. The cow may get too much cold water soon after calving and get a chill, and there may be causes that are not so readily traceable. Formerly we used to send for some man who has had experience and get him to come and remove the afterbirth by inserting a well-oiled hand and carefully removing one attachment after another. Sometimes these operations were quite successful, but at other times the results were far from satisfactory.

I always hesitate to recommend a proprietary remedy because of their usual high cost in comparison to the value of the constituents. I once heard a veterinary say that one might be excused occasionally for purchasing a dollar preparation, even if there is ninety-nine cents profit in it. I have no doubt that some cheap mixture, if one knew just what to use, would be just as beneficial, but there are proprietary remedies that will assist in this trouble. I am not unaware of the ideas of certain of the veterinary profession who disclaim any faith in these causes which I have named, and who insist that all cases are due to infection, and that the cause is the same germ that brings abortion and frequently sterility. That may all be, and I will not argue that the professionals are wrong, only to the extent of sweeping statements which include all cases. In cases that look like germ infection, with possible or probable abortion, I would call upon a veterinarian or go at once about some treatment of disinfection. It will take a good deal of talking to convince practical dairymen that all cases are of this kind.—H. H. Lyon, Chenango Co., N. Y.

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Horticulture

ORCHARD PLANTING NOTES

By F. H. Fassett Wyoming Co., Pa.

The question of planting apple and peach trees in the spring or fall is one that we do not all agree on, and yet we believe the experience of most orchardists is that apples are best planted in the fall under most circumstances, except in some bleak, exposed positions. The fall set tree does not stop growing. The broken roots seem to heal over and new roots commence to grow, and the growth will start much earlier on the fall set tree. It is possible to get more growth than on spring set trees.

With peaches, our experience has been that we lose a much larger percentage when set in the fall, one of the reasons being that the peach tree that we receive from the nursery has been dug before the wood has ripened and the winter seems to freeze them. A good plan is to secure your trees in the fall, heel them in carefully and set just as soon in the spring as the ground can be worked, thus having the trees on hand just when we want them. Often there are delays in getting nursery stock shipped in the spring at the proper time, hence our conclusions are that for best results we would set apples in the fall and peaches early in the spring.

The question of exposure, whether it shall be north, east or south, to my mind is not an important one. The more important question is elevation, frost and air drainage. In selecting a site, we should keep in mind these three more important factors, and not much attention as to which exposure. I have visited successful orchards on the different exposures, and if you will examine closely you will find that it is the three above mentioned factors which count most for success.

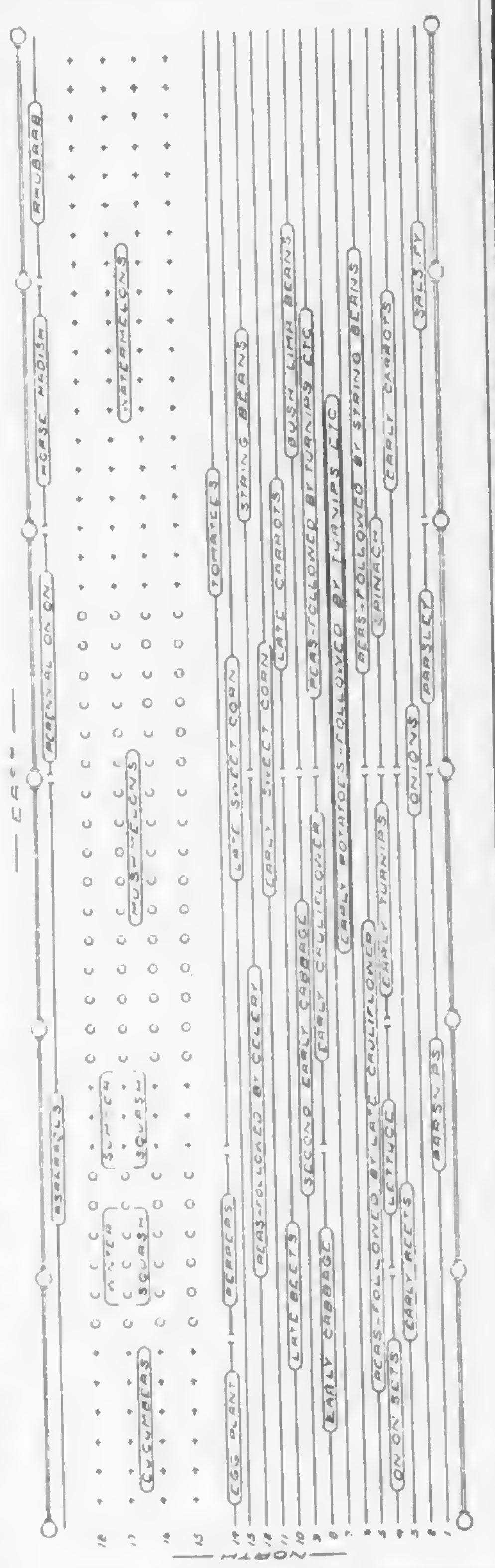
The practice of planting apple and peach together to our mind is not the best method for several reasons. They do not require the same treatment in fertilizing or spraying. We in the East have reached a time when we can not afford to wait 12 to 15 years for an apple tree to commence to be a paying proposition. It is our business to grow the apple tree just as large, or, in other words, bring the apple tree to maturity in just as few years as possible by cultivation and heavy fertilizing. Most apple trees ought, and can be, made a paying proposition from the sixth year; this means forcing.

This method would be unwise with peaches and not thought of by the experienced grower. We know of many very successful orchards planted together, usually at the expense of one or the other, and we believe these same orchards would have been much more successful had they been separated. When separated, we give to each just the cultivation, spraying and fertilizing needed to bring them to their highest development without interfering. We believe the up-to-date planter will plant apples with apple fillers of some early bearing varieties and peaches by themselves, and we are bound to realize more pleasure and profit by the separation.

PLAN THE GARDEN EARLY

The importance of early buying of garden and farm seeds can not be overestimated, and in order to buy to best advantage it is necessary to have the plans made well in advance of the planting season. I know a farmer who lays out his garden by rule and compass, and from this plan on paper separates it into plots and rows, so that he knows before buying the seed just how much space each crop is to occupy. To the man with the true love for gardening which this man possesses, this planning is undoubtedly one of the greatest joys of the year. But few of us have the time or inclination to do this, yet it is really a matter of business to do a certain amount of planning, and do it in the winter.

When the seed catalogues arrive in January and February, I spend several evenings with profit and pleasure studying the pages and re-reading the descriptions of true and tried favorites, as well as the more glowing accounts of the novelties. In the end the most of my buying is usually done from one old standby firm, but I read several catalogues, and occasionally buy a few things from the others. In this way I have become acquainted with several desirable varieties.



AN EXCELLENT PLAN FOR THE HOME GARDEN.

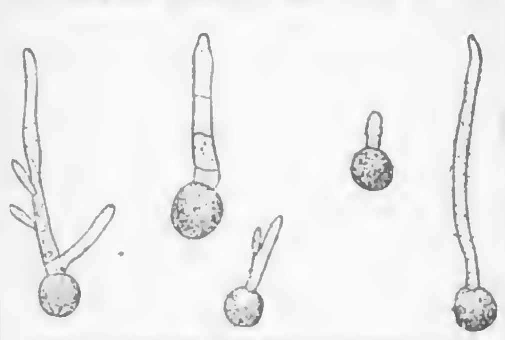
Sad to relate, there are seed dealers (not growers) who are sending out tons of second-class or almost worthless seed each year. There are plenty of good reliable dealers and growers who offer good seed, and while this class may not be offered at two cents per packet, it is much more profitable to buy in the end.

By making the selection early, the grand rush of the planting season is avoided. Most large firms fill their orders with promptness even in April, and I have never been much inconvenienced by delayed seeds when, a few times, I have ordered late. But this is no argument for delay. If, as sometimes happens, shipments are mixed or not sent as ordered, the early buyer has ample time to exchange, while the late buyer must delay the planting or buy "store seed."

It is undoubtedly true that early orders are filled with the best seed. Sometimes a grower has a lot not quite A1. This he will not use unless the supply of the first quality becomes exhausted; then he may fill the late orders with the cheaper quality. I once had my order for cabbage seed filled with seed that had not passed quite so good a germinating test as that with which the early orders of the firm had been filled. This was stamped upon the package and a printed slip enclosed giving the exact result of the test and stating that the seed might be returned if desired.

No planter can afford to use anything but the best seed, and to be sure of getting it he should send in his order early. Late in the season some varieties are often sold out, and even a reliable dealer may be forced to replenish his supply from a source the reliability of which he is not so certain as of his own stock.

I have nothing to say against some "store seed." Without doubt it may be good, but there are seeds being sold in the country stores which are badly adulterated, and it is a well-known fact that some are much too old for use. No reliable dealer offers such in his catalog. To avoid having to fall back upon this class, it is always best to order early.



SPRING DEVELOPMENT OF CERTAIN FUNGUS SPORES.

Before the rush of spring planning and planting there is more time to make judicious selection of varieties. Time is not lost which is spent in studying the catalogues. Do not stick wholly to the old varieties; rather would I plant the true and tried for the main crop and experiment a little with the novelties. In this way some thing may be discovered that is an improvement, and next year it may entirely supersede the old.—Charles H. Chesley, New Hampshire.

THE STORY OF THE BUDS

Few farmers and orchardists know how to read, with any degree of accuracy, the story of the buds. Yet the ability to do so may be, not only a pleasure, but something of considerable profit as well. To forecast the season's apple crop and to judge if the peach crop has been injured by the cold is a very simple matter, and these things may be told with considerable certainty if a few fundamental facts regarding the manner of fruitage be understood.

Of the common fruits, apple, pear, peach, plum and cherry, classified by the manner of producing the fruit buds, the first two belong in one class and the last three in another. All buds are "set" the season previous, and if we are able to distinguish between the leaf and fruit buds, it is possible to forecast the crop any time after the leaves have fallen in the autumn. Of course, as the winter advances the buds become larger and the fruit buds more readily recognizable. The farmer can thus judge how large the dividends may be expected to be from his orchards, and if the prospects seem poor, plant something to take the place of the apple and peach.

The fact that the buds "set" the previous year indicates that the season before is the time to begin to prepare

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NO SPOTS. Pyrox prevents or destroys fungous growths, scab, blight, rot, etc., thus producing beautiful,
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Every kind of Hay that Grows; Green, Dry, Short or Tall—Louden's Balance Grapple Fork Grips and Lifts them all!
This fork is absolutely different in both principle and operation from any other hay fork built. It's the only fork that grips a big load and holds it true—the only fork that works equally well in all kinds of hay.
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lifts half a ton of dry Clover or Alfalfa. It carries bigger loads, with less dribbling, and moves hay faster than any other hay fork on the market. Good in the barn or for stacking in the field.
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Eureka Center Draft Mower
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46 years on the market. Improved for 1913.
EUREKA MOWER CO., Box 755, Utica, N.Y.

TIGHT BINDING

for a crop. Apples are produced on what are known as fruit spurs. Thus a crop of spurs must be grown the year before, and in order to do this the tree must not be too heavily burdened with the development of fruit. Here is one of the reasons for fruit thinning. If the trees were kept thrifty and not allowed to bear too heavy crops any year, there should be no reason for semi-annual bearing. The reason for annual crops in some localities in the Pacific States is not so much that the climate and soil are better adapted to apple growing, but that the growers practice scientific methods in pruning, cultivating and thinning. While a crop is being developed new spurs are being produced for the next season. If one will examine a thrifty apple tree he will find many of these fruit spurs, some of them perhaps giving evidence of having borne fruit the previous season, in a noticeable scar where the fruit stem was separated. Thus the history of the past season is written in the case of the apple.

Spurs that fruited the past season will show no fruit buds, but at one side of the scar will be seen small pointed buds. These are leaf buds. The fruit buds are larger and with rounded ends. Cut across one of them and the embryo flowers may be plainly seen. The thrifty tree bears spurs each year and thus should produce fruit each year. Leaves are borne everywhere on the tree, but we must look for fruit buds only at the tips of these little branchlets which have been mentioned. The pear produces its fruit in the same manner.

The peach, which is representative of the stone fruits, bears its fruit upon shoots of the previous season's growth. The fruit buds will be found only upon strong wood. Here will be seen buds in sets of three, the outer large and plump and the one in the center small and seemingly undeveloped. The large rounded ones are fruit buds and the central one will produce leaves only. Weaker shoots will produce none of these buds in sets, and it will be useless to look for embryo flowers in any of the narrow terminal buds. Unlike the apple and pear, the stone fruits are borne latterally on the branches and not at the ends of spurs.

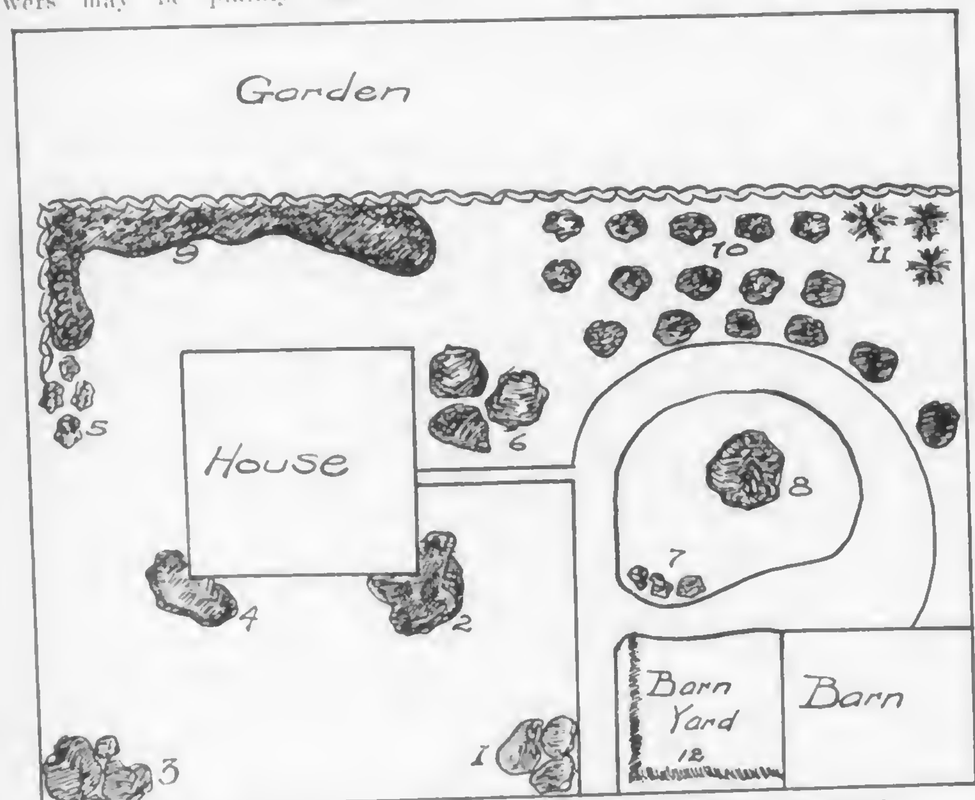
The fruit bud of the peach, if not injured, should show a greenish center, but if the embryo has been killed by alternate freezing and thawing or low temperature it will be of a dark or brownish color. To be certain upon this point, cut across the base of the bud with a sharp knife. The buds upon the weaker shoots are not so plump; indeed, were it not that they are borne in threes, it would sometimes be hard to distinguish the fruit from the leaf buds. Peach trees should be made to make a lot of strong wood each year. Cultivation should be discontinued by midsummer and a cover crop sown, this to harden the shoots so they can stand the low temperature of winter. Severe cutting back is often desirable, and this should be undertaken in an "off" season, when there is small prospect for a crop.

Every orchardist should examine his trees early in the spring and determine how large a crop he will have. By so doing he will be able to plan for the marketing. One thing that should be attended to is the ordering of the necessary supply of baskets, boxes and barrels for shipping the crop. This he can do to better advantage before the advent of the busy season.—Charles H. Chesley, New Hampshire.

BEAUTIFYING HOME GROUNDS

The above home plan shows a difficult problem in farm home beautifying. The dwelling is 20 feet from the highway. The barn and barnyard are about 70 feet from the dwelling and lie along the highway. The barnyard is toward the dwelling.

No boundary hedge is used before the dwelling, as it would restrict the meagre expanse of lawn. Two groups of California privet and purple lilac are used, however, one near the entrance, which may be kept low, and one near the limit of the lawn, which may be allowed to grow tall. Each group comprises seven specimens.



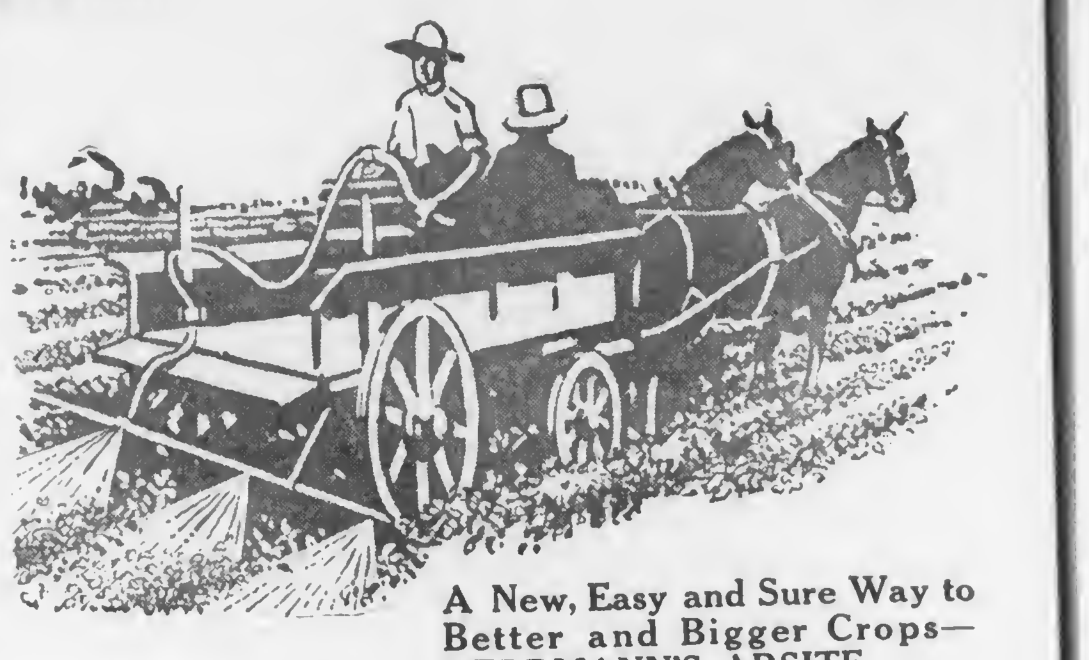
THE SOLUTION OF A PROBLEM IN FARM IMPROVEMENT.

The garden is surrounded by privet hedge, which terminates in the rear of the house in a clump of shrubs composed of two Spirea Van Houttii and two Forsythia, rather closely planted. On one side of the dwelling is a mass of azalea amoena, which is covered with rosy flowers in June, and on the other an equally effective mass of Weigela.

An Arbor Vitae hedge screens the barnyard from the road and dwelling. This serves as an excellent windbreak, and also makes a fine background for a planting of flowers along the drive.

Cost of Materials

1 California privet (Ligstrum ovafolium) $3 per 100	$3.00
2 Azalea amaena	.80
3 Viburnum dentatum	.48
4 Weigela rose	.56
5 Spiraea Von Houttii and Forsythia fortunei	.64
6 Cut leaf maples (Acer Werii)	1.80
7 Lilac (Syringia vulgaris)	.48
8 Silver maple (Acer dasycarpum)	.40
9 Border of hardy roses	1.70
10 Apple and peach orchard	4.00
11 Norway spruce (Picea excelsa)	2.00
	$15.86



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It sticks like Arsenate of Lead but it is ten times stronger. Spray once—then watch the bugs die. It contains no free white arsenic and therefore won't burn the foliage.

One pint of Arsite has the killing efficiency of 3 to 6 pounds of Paris Green and 10 to 12 pounds of Arsenate of Lead.

Arsite is in liquid form, put up in tin cans—it mixes more thoroughly, remains in suspension longer and is more convenient to handle. It keeps indefinitely.

Herrmann's Arsite mixed with Bordeaux or freshly slaked lime, and used thoroughly, will do away with leaf-eating bugs.

If you don't spray with Bordeaux for blight, use **Herrmann's Calite** — just another form of Arsite, ready to stir into clear water.

Send for Full Information about these wonderful insecticides. You'll use them when you know about them.

Arsite is sold in 35c half-pint cans and in 65c pints; Calite in 30c pints and 50c quarts. We can supply you if your dealers can not.

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THE PERFECTION SIX-ROW SPRAYER
THAT DISTRIBUTES ALL INSECTICIDES AND FUNGICIDES SIX ROWS AT A PASSAGE, AND
WITH ONE HORSE AND ONE MAN covers THIRTY to FORTY ACRES a day, in the most thorough manner possible. It is Simple, Strong, Reliable, Durable and Practical—Not an experiment. Nearly 2,000 in use giving entire satisfaction. Don't buy any sprayer until you get our Catalogue giving full particulars and prices.
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We will ship this truck, the best device ever made for holding a plow, immediately upon receipt of your order. You try it 10 Days, in any kind of ground. We'll pay freight both ways and return your money if you don't think the extra work you do is worth the price of the Winner. *Special Money Saving Introductory Offer.*—Write today for my free book and special offer. You haven't a single chance to take. You put it absolutely up to us to please you with a Winner plow truck and we can do it. Write now.
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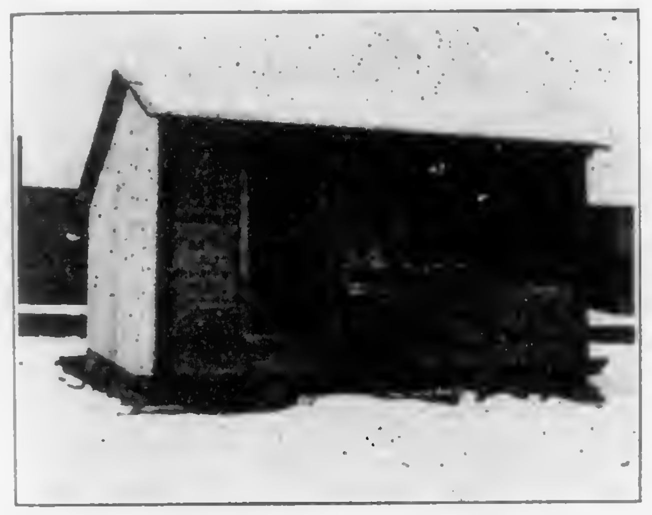
Poultry

FEEDING YOUNG CHICKENS

The feeding of young chicks is a practice which requires skill, and requires more care than the feeding of the fowl at any other time in its life. The object in chick feeding is to grow a good strong frame and a strong, healthy chick.

The most essential points to remember in chick feeding are the following: Provide clean quarters and runs. Use only fresh, untainted and wholesome food. Provide sufficient but not too much feed. Leave no wet feed before the chicks from one meal to the next. Have plenty of ash in the feed. Provide sufficient grit, charcoal, green food, fiber and animal foods. Provide clean water constantly. Make no abrupt changes in the methods of feeding. See that the chicks exercise. Allow them to have access to fresh earth. Watch them carefully all the time.

The quantity of feed depends on the judgment of the feeder. We want a steady growth all the time. The following are several combinations of feeds that have been found very satisfactory:



A CONVENIENT COLONY HOUSE. May Be Used For Feeding Chicks in Summer and Laying Hens in Winter.

No. 1

Rolled oats	8 lbs.
Bread crumbs	8 "
Sifted beef scrap	2 "
Fine bone meal	1 "

No. 2

Cracked wheat	3 lbs.
Finely cracked corn	2 "
Granulated oat meal	1 "

No. 3

Wheat bran	3 lbs.
Wheat middlings	3 "
Corn meal	3 "
Beef scrap	3 "
Bone meal	1 "

No. 4

Whole wheat	3 lbs.
Cracked corn	2 "
Hulled oats	1 "

No. 5

Wheat	3 lbs.
Cracked corn	2 "

These are to be fed in the following manner: The first 48 hours after hatching the chick is not fed at all as it has the yolk of the egg enclosed in its abdomen, which supplies it the first two or three days. Feeding before this time is liable to cause indigestion and white diarrhea.

Before the first feed they should have granulated charcoal or ground bone and grit placed before them 10 to 15 minutes, and after the first day all the time. The first five days feed No 1 moistened with skim-milk (sweet or sour) five times a day. Keep a dry mixture of 2/3 of No. 2 and 1/3 of No. 3 in a shallow dish before the chicks continuously. For the next 10 days feed No. 3 in a moist mash four times a day. Still keep the mixture of No. 2 and No. 3 before them, and feed No. 2 in the litter so they will scratch for it. From 15 days of age until they go out on the range, or until they are well feathered, keep No. 3 as a dry mash before them and feed No. 4 in the litter three times daily. After this time feed No. 3 as a dry mash available continually and feed No. 5 as a grain feed.

Green foods are not absolutely essential but better gains are made with them. They keep the chicks in better health and furnish some nutriment. Lettuce leaves are largely used in winter by men who have it available. Chicks like finely chopped onions, and they have a tonic effect. Sprouted oats are exceptionally good and are cheap. They may be sprouted in any warm room. Alfalfa and clover leaves, scalded, make good green food in winter. In the spring have a grass run. Allow the chicks all the green food they will eat, and have it where they can reach it all the time.

Another method that has met with success in chick feeding is as follows: Keep off feed the first 36 to 48 hours after hatching. Boil infertile eggs one-half hour and then grind shells and all. Mix one part with six parts rolled oats. Moisten with skim-milk. Feed this mixture three days and five times a day. Keep grit, charcoal, water and green food before them as in the previous method.

From five days until three weeks old feed them the following dry mixture in limited amounts as soon as they can see to eat in the morning. This is fed in the litter. The results are much better when fed in this way than when given in hoppers. The exercise obtained is an important factor in the value of the foods:

Cracked wheat	15 lbs.
Fine cracked corn	15 "
Granulated oat meal	10 "
Fine cracked peas	3 "
Broken rice	2 "
Chick grit	5 "
Fine charcoal	2 "

At 9 o'clock the eggs and rolled oats mixture is fed them in shallow dishes. As soon as they have satisfied their appetites the dishes are removed. At 12.30 the grain mixture is fed again, and at 5 o'clock all they will eat of the rolled oats and egg mixture.

At three weeks of age the eggs and rolled oats mixture is displaced by the following:

Wheat bran	2 lbs.
Wheat middlings	2 "
Corn meal	4 "
Linseed meal	1 "
Fine beef scrap	2 "

This is moistened with water or milk and fed the same number of times as the egg and rolled oats mixture.

At six weeks of age the grain mixture is replaced by the following as a dry mash before them all the time:

Wheat bran	3 lbs.
Wheat middlings	3 "
Corn meal	3 "
Beef scrap	3 "
Bone meal	1 "

In addition, they are fed twice daily a mixture of 3 lbs. wheat and 2 lbs. cracked corn.—H. Fergus, State College, Pa.

THE MIXED FLOCK

While the old fashion of "changing eggs," no matter what the cross in breeds, has been largely superseded by a more sane method of breeding, there are still too many flocks in the farm poultry yard which show a variety in form and color. There are still too many who cling to the notion that because Neighbor A is getting eggs right along while their own hens refuse to lay, the proper thing is to infuse some of his stock into their own.

The chances are that if they had stopped to investigate they would have found a very different reason for the scarcity of eggs. While there are breeds with a high laying record, there are also individuals in these very breeds that prove unprofitable, thru lack of proper care and conditions. And it may be these which are needed in many cases where the "setting of eggs" is the remedy applied.

In the great egg records of the world it is not the mongrel bird which scores the highest. Pure blood of the favorite variety preferred is everywhere what is making the highest mark. And there is no reason why it should not come as near doing it on the farm as in the small yard, while there are several reasons why the farm flock should be of a uniform breed.

When the chicks of different breeds are raised together, some will mature more rapidly than others, and some will crowd others to the rear in the feeding pen. There are the quick and alert ones, and those more slow in motion; and some are going to get the worst of it in securing rations. Then when the young cockerels are to be culled out and sold, the Leghorns will have developed more quickly than the Rocks and Orphingtons, and there must be two different sales, or some will not be at the best stage. There are differences in disposition to overcome, and the whole task of chicken rearing is rendered more complex. The tame chicks of the larger breeds must be stirred up into useless excitement just because the Leghorn is a nervous little thing, always ready to take wing at every move. Uniformity in disposition, habits and rate of maturing is an aid too little appreciated until the lack of it is experienced.

Appearance counts for much, and it can not be denied that a flock of chickens of uniform color is a much more attractive sight than the one in which individuals are of as many colors as the rainbow. There is better sale for them, too; even the man who puts them on the market much prefers a uniformity. They look better to his patrons; and no matter what the breed, chickens which are all alike attract more favorable notice than the mixture.

In olden times it might have seemed a convenience to be able to identify Speckle readily and to tell that it was Spot which had a nest in the back of the straw stack, but the trap nest and methods of marking have done away with this, and each hen may get just the credit she deserves, even tho a counterpart in form and color of one quite the opposite in point of service. It is absurd to think that the promiscuous crossing in a haphazard way will prove as effective as that done by specialists, who have worked for years to produce standard strains; it is more probably the undoing of scientific work, even tho for a year or two it seemingly succeeds. Sooner or later the "mongrel" type runs itself out, and the experimenter must begin over again. It is an easy matter to grade up the flock along any line preferred. And the breed which you prefer, well cared for, will give very much better results than the little of everything, and really not much of anything.—Bessie L. Putnam.

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It cannot be cured but can be prevented easily and at little cost, if sprayed in time and in the right way. Spraying increases the yield enough to pay.
IRON AGE Traction Sprayers
are built for this purpose. 4 or 6 rows, 55 or 100 gallon, wood or steel tanks, single or double acting pumps with least slippage, wind shift adjustment, nozzle strainers, for one or two horses. Ask your dealer about them and write us for new *Free* booklet.
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140 EGG INCUBATOR and 140 CHICK BROODER Both For $10
The Incubator is California Redwood, covered with asbestos and galvanized iron, has triple walls, copper tank, nursery, egg tester, thermometer, ready to use. 30 DAYS' TRIAL—money back if not O. K. Write for FREE Catalog today—NOW.
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Made of highest quality ingredients, carefully mixed in proper proportions. Clean, appetizing, vital foods for poultry, pigeons, chicks. Perfectly balanced, absolutely pure. Used everywhere. Keystone foods make birds healthy and keep them so. Your dealer has them—If not, write to Taylor Bros., Camden, N. J., for catalog.
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PENNSYLVANIA FARMER
AGRICULTURE THE KEYSTONE OF NATIONAL PROSPERITY
ESTABLISHED 1880 PUBLISHED WEEKLY

Established 1880. Published Every Saturday.
Entered as second-class matter at the postoffice at Philadelphia, Penna.

The Lawrence Publishing Co., Proprietors
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M. L. LAWRENCE..........Vice-President
P. T. LAWRENCE......Secretary-Treasurer

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General Office
214-216-218 South 12th St., Philadelphia, Pa.

Branch Offices For Advertising Only
Cleveland, O., 1011-1015 Oregon Ave.
New York City, 41 Park Row
Chicago, Ill., 600 First Nat'l Bank Building.
Detroit, Mich., 39-45 Congress St., W.

TERMS OF SUBSCRIPTION

One Year	52	copies to one person	$0.50
Two Years	104	" " " "	$1.00
Three Years	156	" " " "	$1.25
Five Years	260	" " " "	$2.00

Always send money by draft, postoffice or express money order or registered letter. We will not be responsible for cash sent in letters unless registered. Address all communications to, and make all drafts, checks and postoffice and express orders payable to The Lawrence Publishing Company, Philadelphia, Penna.

RATES OF ADVERTISING
15 cents per agate-line measurement, or $2.10 per inch (14 lines per inch) each insertion.
No advertisement inserted for less than 45 cents per insertion.
No deceptive, immoral or swindling advertisements inserted at any price.

Philadelphia, Pa. March 22, 1913.

STATEMENT OF OWNERSHIP AND MANAGEMENT OF THE PENNSYLVANIA FARMER, PUBLISHED AT PHILADELPHIA, PA., REQUIRED BY THE ACT OF AUG. 24, 1912.

Editor—Arthur J. Anderson,
Philadelphia, Pa.
Managing Editor—Arthur J. Anderson.
Philadelphia, Pa.
Business Manager—Neff Laing,
Philadelphia, Pa.
Publisher—The Lawrence Publishing Co., Cleveland, O.
Owners (holding 1 percent or more of total amount of stock)—

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Sworn to and subscribed before me this 12th day of March, 1913.
[Seal.] Julia R. Moore,
Notary Public.
(My Commission Expires February 21, 1915.)

CROP CONTESTS

When money prizes were first offered for single ears and ten-ear entries of corn a few years ago, many excellent agricultural authorities feared that the matter was being over done. They argued that the cash prizes were so large that they, rather than actual study in corn improvement, would be the end sought, and that the entire movement would be dropped at an early date as a mere fad. There was ample ground for their fears as long as the single ears or groups of ears were made the principal feature, but wise men saw the danger as well as the possibility of the interest thus developed, and gradually the yield per acre and the net profit per unit of acreage have been made the basis of competition. This has brought the competition down to a practical basis where all may compete with more nearly equal chances for success, and with much greater profit to all in developing new ideas and new practices in crop improvement. Out of the interest thus developed by big prizes and widely advertised winnings have come the innumerable corn shows and corn-growing contests, awakening new interest among older farmers and enlisting the boys and young farmers in new problems in increasing yields and decreasing cost. These are fundamental problems in profitable farming, and the lessons learned in the stimulus of a contest are lessons which can and will be applied in the every-day business of farming in later years. The popularity of the corn-growing contest is increasing every year, and the enthusiasm is reaching out to other crops and other problems. A banking institution in Philadelphia recently appropriated a rather large sum of money to be given in prizes for such contests during the coming season. The requests for information on details of this contest have been so numerous that nearly 100,000 folders have already been sent out, and it is expected that this number will be doubled. In addition to this, five other banks have announced similar contests, which will be open to farmers and their sons in Pennsylvania, New Jersey, Delaware and Maryland. It is now proposed to call a conference of interested banks to discuss details of agricultural development. Three potato-raising contests are also announced, and it is expected that the work will be extended to include other staple crops. It will require good farming to capture prizes in these contests, and the work in competition is the making of good farmers.

A MARKET PLAN

A plan of marketing farm produce which is being proposed for farmers selling in the Philadelphia market presents a number of unique and promising features. A number of men have secured control of a chain of 24 retail stores claimed to be in successful operation in the city. These stores are reported as having done $265,000 worth of business in meats alone last year, and paying a profit equivalent to 6 percent on a capitalization of $300,000. Some of these stores have taken up farm produce as well as meats, and in every case this has increased the sale of meats, and has shown that the two classes of commodities can be handled together with profit. It is now proposed to establish a wholesale department and receive farm produce of every description except grain and milk. This produce will be distributed thru the retail stores and all surplus will be sold to outside retailers on a commission margin. It is expected that a large percentage of receipts will be sold thru the company stores until the business has had time to develop, and thus the farmers are promised a direct market with the retail trade without the intervention of middlemen. In addition to this, the company has an option on a boat line on the Delaware which will bring in the produce, thus giving the operators control of the transportation as well as the retail business. This gives the plan the possibility of the two great advantages in direct marketing—the elimination of the middleman and elimination or participation in the profits of transportation. With these advantages operated honestly and solely in the interests of the business and all of the holding company there should be little question of its success. But much will depend upon the city end of the business and the integrity of the men who will manage the organization. A few of the things which every farmer should want to satisfy himself on before becoming deeply interested in the plan are the character and financial standing of the city representatives; the actual present value of the stores to be taken over by the company, and their location and management for the best interests of the future business of the concern; the operation of the wholesale department and the basis of commission business to handle produce not sold thru the retail stores; the actual physical value of all property taken over by the company and its relation to the capitalization of the company; the division of the stock and its manner of holding and basis of participation in profits; the character of officers elected and their salaries. The plan has a number of admirable features. It presents a basis for successful co-operation in direct selling. But because of its opportunities, there must be no mistakes in its organization. Its success will depend upon an absolute square deal with the farmers. It is a big undertaking, and will require good management to bring out its possibilities. It is too big for farmers to act upon singly. They should be represented by a competent committee elected by the farmers with instructions to make a careful and thoro investigation. The plan is not unlike that which failed in New York a few months ago under the name of the United Stores Company. But regardless of that failure, the plan has great possibilities and only needs honest and efficient management to insure success.

EXECUTIVE INVESTIGATION

The action of Governor Tener in defying the house investigating committee promises to develop an interesting, if profitless, controversy between the legislative and executive departments. The governor's attitude for some time past has indicated that he is inclined to regard any and all efforts to inquire into the inner workings of his department as unwarranted interference. The first suggestions of such inquiry were met with only a half-hearted pretense at co-operation. The demand for a report of the State Live Stock Sanitary Board brought the warning from the governor that the house was interfering with the routine work of busy officials by its unwelcome interest in the affairs of other departments. What the governor appears to have regarded "the limit" was reached last week when the house appointed a committee to investigate the charges that a number of employes in the executive department were drawing salaries for services in more than one state office. The demand for the presence of these dual officeholders before the committee first met with the refusal of the accused officials to attend the meeting, and later called out the official defiance of the governor to press such an investigation. The governor based his defiance upon the claim that the state constitution gives him the supreme executive power, and as such he can resist investigation of his department when he believes that such investigation is "incompatible with the public interest." In other words, the governor can decide when the affairs of his department have reached a point where an investigation is justified! It now remains with the house to disprove this claim on constitutional grounds or convince the governor that it is compatible with public interest to permit the public to learn what is going on in his department. It is a point upon which the house promises to exert itself and yield valuable enlightenment upon constitutional authority with benefit to itself or the governor. The claims which led to the controversy charge 49 state officials with drawing salaries for services in two or more positions. The positions thus held as supplementary to the main appointments yield from $120 to $3,000 per year to those holding them. While this duplication in office may not constitute a serious misdemeanor in itself, it is manifestly a dangerous precedent, and ought to be within the realm of the legislature to investigate and correct. But the exemption of any state department from complete investigation and publicity is a vastly more dangerous principle. It can scarcely be conceived that the governor is serious in trying to maintain such exemption of his department. It appears more like a repetition of the tactics used by the same official a few weeks ago when he denounced a delegation of farmers for demanding that one of their profession be appointed on a state agricultural commission. That denouncement served to silence the demand temporarily, and may have yielded a small amount of satisfaction to the governor. But the house is in position to persist in its efforts, and even tho it may result in the loss of valuable time and delay important legislation, the legislators are justified in forcing the issue.

PENNSYLVANIA LEGISLATIVE NEWS

Township Road Law.—The proposed township road law, under which the state aid for the maintenance and development of the 80,000 miles of so-called dirt roads is to be distributed, has been introduced. This bill was prepared after a study of the road laws of New York, Massachusetts, Connecticut, Ohio and other states. Primarily, it is designed to extend aid to the townships on a basis of 50 percent of cost of improvement and maintenance, not to exceed $20 a mile, and secondarily to promote more efficiency among supervisors' methods. Failure of local road authorities to properly maintain the roads committed to their care is given as the reason for withholding state aid in the full amounts necessary to producing good results. To give the state a greater control of expenditures of the public money voted, it is now the plan to create a bureau of township roads in the State Highway Department, whose chief is to be a guide and counsellor to local road authorities. The supervisors will meet annually and elect their own superintendent of roads. This county superintendent will direct the road work of the supervisors. A greater problem is presented on the side of appropriations. It is estimated that it would take from $2,000,000 to $3,000,000 every two years to enable the township roads to be cared for as contemplated by the act. The state is committed to the construction of the 8,000 miles of highway in the system laid down by the Act of 1911, and must maintain these roads at an annual cost of probably $1,000,000. Then, too, the state must provide state aid for the construction of roads in conjunction with counties, boroughs and townships. If appropriations are to be made out of current revenue for all of these objects it will take about one-sixth of the estimated income for the coming two years, which is $55,000,000. Just how this financial problem is to be worked out remains to be seen.

Want 70 New Routes.—Seventy new road routes, to be parts of the state road system, are proposed in bills now before the legislature. These roads are in 34 counties, and to add them to the system would mean that the state would assume responsibility for the construction and maintenance, relieving the townships, thereby adding another item of cost to the highway department. Many of the roads asked are hardly justified, being asked merely to please some constituents of members; but there are others which tap good producing agricultural regions and which would connect with good township or county roads.

Farmers Are Included.—The attempt to relieve farmers from the operation of the proposed employers' liability of workmen's compensation failed in the house a few days ago, and the farm hand is now on the same plane as the man in the mill. As a concession to the farmers, the house passed an amendment to the insurance laws which enables farmers to form insurance companies to protect against liability along the lines of mutual fire insurance companies. The new liability law is going to make a vast difference in daily life in Pennsylvania, as a person hurt in discharge of duty will be enabled to claim compensation according to a scale laid down in the law, whether he be struck by a train or fall out of a hay mow.

Oleo Fight Next.—The biennial battle over the oleo law is about due to start in the house, a bill to permit the sale of oleo containing coloring matter having been reported out of committee. In the senate a bill has been offered, under administration auspices, which establishes a standard of color and does not permit the use of any coloring matter.

Too Many Bills.—This legislature appears to have gone to extremes in new legislation. Almost 1,600 bills have been presented in the house and 600 in the senate. Bills have poured in covering every conceivable subject and with 10 weeks of the session gone, less than 15 bills have reached the governor.

The Hunters' License.—As amended in the lower house, the hunters' license bill contains a provision that any person arrested shall be taken to the nearest justice of the peace for a hearing. The application for licenses must be made to the county treasurer instead of to the prothonotary of the court, and no person under 14 may have a license. Boys between 14 and 16 may obtain licenses if consent of parents or guardians is filed. The requirement that all hunters display their license number on a tag on their sleeves is retained.

Fish Work.—The general appropriation bill carries an appropriation of $96,000 for the fish propogation work, including the maintenance and repair of the hatcheries and the distribution of the young fish. This is to care for the work for two years, and it is part of the plan to make extended distribution of young trout in the spring and fall of each year.

Revenue Acts Uncertain.—Nothing appears to be settled as yet regarding the revenue acts, it being the plan to allow the employers' liability, public service commission and child labor bills to get out of the way before taking up these matters. Bills are pending for return to counties or municipalities of all personal property tax, of all mercantile licenses and of automobile revenue as well as of the proposed coal tax. If all of the returns would be made, the state treasury would get little revenue outside of corporate taxation and penalties.

The Live Stock Bill.—The proposed live stock law, which reorganizes the State Live Stock Sanitary Board, providing regulations for inspections and quarantines, is expected to go thru the house this week. As it stands it settles the law on disputed points. The scale of compensation for animals killed is to be two-thirds of fair market value, the maximum to be paid being $70 for a registered bovine; $60 for a horse, jack or mule; $40 for non-registered, and $10 for sheep or pig. Owners may be allowed to dispose of carcass if it does not endanger public health.

School Code Changes.—A disposition to go slow in acting on proposed changes to the school code is being shown in both houses. The 60 or 70 bills on the subject have been referred to sub-committees with instructions to study, and it will be two weeks before anything is done.

Liquor Legislation.—The reporting to the house of the bill to regulate clubs by requiring them to pay a state license and to maintain the same hours as saloons is the start of another battle over liquor legislation. It is to be followed by bills restricting the hours for sale, making all saloons close at midnight and prohibiting sales on Memorial, Thanksgiving or Christmas days.—Hamilton, Harrisburg, March 17.

NEW JERSEY FARM NEWS

Crop Contests.—Great interest will be manifested again this year in the boys' corn contests. A stimulus has been given by the announcement of a Philadelphia bank that it will give $1,250 in prizes for the best corn grown in Pennsylvania, New Jersey, Delaware and Maryland. Local banks are offering supplementary awards. The Monmouth County Board of Agriculture has made an appropriation to the corn growing contest committee of the Y. M. C. A., and has also appropriated $60, divided into $30, $20 and $10 for the best acre of potatoes grown. It was announced at the last meeting of the Union County Board of Agriculture that the People's National Bank of Westfield would give a cash prize of $10 for the 10 best ears of corn grown in that county this year. The board members also decided to offer prizes. They will give sums of money aggregating $100 for the best vegetables of various kinds produced in the county. In Mercer and Sussex, the contests will be in charge of the farm bureaus of these counties. In the latter county, Ralph Decker, county superintendent of schools, will co-operate and several individuals offer additional prizes. In Burlington County, the Y. M. C. A. has charge of the contest.

Standard Measures.—The new law which was drawn by Superintendent Waldron, of the Weights and Measures Department, fixes standards for fruit and vegetable baskets, boxes and containers, and makes mandatory the use of standard dry measure quart and pint boxes for the sale of berries and small fruits. The standard is the bushel with its multiples of two, four eight and 16 quarts for the smaller size boxes, baskets and containers. Another new law brings the weighing of hay and straw under the state act, as coal is now.

New Cold Storage Bill.—The new cold storage bill is practically sure of passage. It is drastic, but meets a long-felt want, and is the first of its kind ever put before any legislature. The bill makes it unlawful for any person or corporation to place in cold storage any article of food unless each container and its contents have first been inspected and pronounced wholesome by an authorized officer. Such inspector must issue a certificate stating that the food product has been examined and found in first class condition. It is further required that such article of food must be placed in cold storage within 24 hours after such inspection. Cold storage plant owners are prohibited from receiving and storing any food products unless they have been so inspected and are offered within 24 hours.

Would Abolish Small Slaughter Houses.—Recommendation is made by Dr. R. B. Fitz-Randolph, chief of the division of food and drugs of the State Board of Health, that all small slaughter houses in the state be abolished and slaughtering of animals for food be concentrated. He declares that the inspections of his department for the past year showed that much meat is slaughtered in New Jersey that is not fit for food, and he believes that large centralized slaughter houses, which could be more easily regulated, are one solution of the problem.

February Cattle Tests.—To the commission on tuberculosis in animals has been presented by Chief Inspector Charles McNabb, a report covering the tests of cows and results during February. The report shows that 488 cows were tested before their entrance into New Jersey; that 290 cows were tested after entering the state; that the number reacting and slaughtered was 11. Appraisements of native cattle slaughtered total $2,836. The amount received from meat and hides sold (slaughtered under inspection) was $922.90. There were received from shippers of imported cattle for testing $242.50. Charts and letters from veterinarians show 18 head of incoming cattle condemned in tests made outside the state. This, added to the 11 condemned after entry, gives a total of 29 head.

State Hogs Get Cholera.—Hog cholera has greatly diminished the swine herd at the State Hospital near Trenton. Something like 150 pigs and hogs have died from the disease. A great many also died at the State Asylum, at Morris Plains. The swine are fed the offal from the kitchens until within a few weeks before killing time, when they are given grain for the purpose of hardening and preparing the meat. Heretofore they have proven extremely profitable. The members of the herds which remained were treated with a special serum made for use in immunizing hogs attacked or exposed to the cholera. The cost of the serum amounts to about $1.50 for each hog treated, but in this instance it was found to be well worth the expense and trouble of the trial, as it saved all of the hogs which had been isolated as soon as the first symptoms of disease were found.

Demonstration Farm Department. In line with a recommendation of former Governor Wilson's message, Assemblyman Kays, of Sussex County, last week introduced a bill to create a State Department of Farm Demonstration. It provides that the Governor shall appoint a superintendent of the department, term 6 years, and salary, $3,000, to devote his entire time to the work of farm demonstration thruout the state. The superintendent is to appoint a county superintendent in each county; these county superintendents to work in co-operation with the state department.

Sweet Potatoes Up in Price.—The sweet potato crop is nearly exhausted, and the city commission men are going over the growing districts with a fine-tooth comb for the succulent tubers, and are offering as high as $3.15 a barrel. Storage certainly paid well this year.

Honey to be Expensive.—The open winter will be responsible for a higher price for natural honey. The current price is 25 cents a pound, and a rise of several cents is expected. The warm winter days aroused the bees from their hibernation, made them active and consequently hungry. The result was that they ate much of the honey they had stored, hence a shortage has been created.—D. T. Hendrickson.

NEW YORK LETTER

Governor Sulzer Removes Superintendent Reel.—Alleged graft disclosures with the highways department and failure to aid investigators has cost Superintendent C. Gordon Reel his job as superintendent of highways of the state. The governor also says that he has information of a "very grave character" which has come to light since his trip to Washington to attend the inauguration ceremonies. It was Reel who admitted on the witness stand during the investigation of the department that the state had lost nearly $800,000 the past year in highway contracts and otherwise.

More Bond Issues Wanted.—As if it were not sufficient to bond the state heavily for good roads (which may be all right, if honest men handle the money and make the contracts), a bill is soon to be introduced in the state legislature to bond the state for $15,000,000 to provide funds for state buildings and other permanent structures which have heretofore been erected by appropriations from the regular revenues. It is, of course, a good ways from being a law yet, as the people have to vote on the question after it has passed the legislature and received the governor's signature.

The State Fair.—It has been decided not to interfere with the present state fair commission this year, or at least until the terms of each expire. The assignment of departments to the commissioners was made at a recent meeting and some of the rules were revised. It was decided to combine the horse show, that is, the high steppers and driving horses, with the farm and draft horse department, and Commissioner Huson was put in charge. The fair will be open three or four nights this year, and the success of the innovation will be watched with interest.

High-Priced Stock.—What is said to have been the largest individual sale of Holstein-Friesian cattle ever held in central New York, was the sale a few weeks ago of the Smithdale herd of 80 cows, bulls and calves at $16,600. When calves six weeks old bring $500 and $600 they are selling pretty well. It is said that "'several calves of only two or three days old brought $200.'" One customer was from Omaha, whose purchases amounted to over $1,860.

Various Notes.—A bill has been introduced in the legislature requiring a license on country cats to prevent bird destruction as far as possible. Another bill requires the state to furnish free school text-books; it is one of the governor's measures. The granges are patronizing the state grange purchasing exchange more extensively than ever this spring. Friends and promoters of the bill to license commission merchants ask the prompt support of the farmers.—New Yorker.

GREENVILLE FARMERS' WEEK

The fourth annual Farmers' Week, at Greenville, Mercer County, Pa., was held March 3d to 7th, inclusive. This Farmers' Short Course was held under the auspices of the Pennsylvania Agricultural College and the Board of Trade at Greenville. The various sessions were attended by more than 500 farmers from Mercer and surrounding counties. There might have been a larger attendance, but the weather turned very cold during the middle of the week, which kept down the crowd for one or two days. Live stock and farm crops were the principal lines of work taken up, altho the subjects of horticulture, vegetable gardening, commercial fertilizers and soils were discussed. Evening meetings were held, which were largely attended by the residents of Greenville and those in attendance at the day meetings.

A carload of live stock, consisting of sheep, beef and dairy cattle, were shipped there from the college. Horses were furnished by Gambel Brothers, of Mars, Pa., who brought in some excellent specimens of Belgian mares and stallions. Purebred Berkshire hogs were secured from the Dain Stock Farm. This afforded excellent material for judging and demonstration work, and considerable interest along live stock lines.

The members of the Agricultural Faculty were assisted by T. E. Martin, of Syracuse, N. Y., who discussed the questions of "Crop Rotation" and "Soil Drainage." He laid particular emphasis on adapting a permanent system of crop rotation in order to get the best returns from Mercer County farms. In discussing soil drainage, he told the farmers how to make tile drains and gave some figures showing the benefits to be derived thru a proper system of drainage. Dr. H. H. Havner discussed the subjects of "Feeding and Breeding Farm Horses," "Live Stock Diseases" and gave a demonstration on horse and hog judging. Considerable interest was shown in the work with horses. Mercer County has the second largest number of purebred stallions in Pennsylvania, which accounts for the particular interest along this line. In discussing the subject of "Live Stock Diseases," he called particular attention to housing stock in well-ventilated barns or open sheds, stating that many of the common live stock diseases might be avoided by a proper system of managing.

Superintendent C. L. Goodling, discussed the "Profitable Selection of Dairy Cows" and the "Feeding and Improving of the Dairy Herd." He used a good and poor type of a dairy cow and pointed out the desirable and undesirable external features. In discussing the subject of feeding, he presented some figures of what has been done in various parts of the state thru the testing associations and a better system of keeping records of milk production. Prof. W. H. Tomhave discussed the subjects of "Beef Cattle in Pennsylvania," "Economical Pork Production," "Wool and Mutton Production," and gave a carcass demonstration. In discussing the beef cattle situation, he called particular attention to the large amount of rough untilled lands that might be used for growing beef, especially in regions where a large amount of roughage, such as corn and clover, can be produced.

In discussing the subject of "Pork Production," special emphasis was placed upon the selection of good foundation, the proper method of feeding the breeding animals and keeping the small pigs in a good growing condition from the time they are born up to the time they are sold on the market. He presented some figures of experiments conducted in various parts of the country in summer pasture for hogs, showing that much better gains can be made where pasture is supplemented with some grain feeds.

For the carcass demonstration, two cattle, one a prime fat steer, the other a common butchers' steer were purchased on the Pittsburgh market. These cattle were discussed on foot and their desirable and undesirable points brought out. They were then killed by Homer Brothers and the carcasses were cut up at the meeting on Friday afternoon. The prime steer dressed 65 percent while the common butcher's steer dressed 54 percent. This material made a good comparison of the two classes of animals.

Dr. J. P. Stewart discussed the subject of "Developing a Commercial Apple Orchard," "Spraying of Orchards" and the "Cultural Methods for the Orchard." In this discussion he presented the results of his investigations along these lines in Pennsylvania during the past five years. Mr. C. G. McBride, County Expert for Mercer County, spoke on the subject of "Renovating Old Orchards." Prof. W. H. Darst discussed the question of "Corn Improvement" and "The Enemies of Farm Crops and How to Control Them." In these discussions he showed how, by a system of selection and testing, the yield and quality of the corn in western Pennsylvania can be materially increased; stating that it was not necessary to have an extremely large ear for the production of large yields, but that a perfect stand is of great importance.

Prof. F. D. Gardner spoke on "The Value of Manure," "Farm Management" and "Alfalfa." In the discussion of the value of manure, he presented some of the results that they obtained at the Pennsylvania Experiment Station where manure and fertilizers were applied, where manure alone was applied and where no manure had been applied; showing that in each case the use of manure resulted in a marked increase in yield over the plots on which commercial fertilizers alone were used. In the discussion of "Farm Management" he took up the arrangement of fields, buildings and applying better business principles to the work of farming. In his discussion of "Alfalfa," he gave some of the essentials of alfalfa growing, namely the preparation of the land, together with the inoculation of the soil. Prof. M. C. McDowell discussed the subjects of "Lime" and "Soil Fertility." Prof. R. L. Watts spoke on "The Latest in Market Gardening." C. E. Myers discussed the subject of "Tomatoes," "Asparagus" and "Cabbage," while M. C. Kilpatrick spoke on the "Farm Poultry Flock" and "Fattening Poultry."

On Monday evening, S. T. Orr, president of the Commercial Club, extended greetings to the speakers and farmers attending the Short Course. This was responded to by Prof. M. S. McDowell, after which Miss Sara Lovejoy, Dean of Women at the Pennsylvania State College, spoke on "The Relation of Domestic Science to the Farm Home." On Tuesday evening C. F. Knoll gave an illustrated lecture on "Plant Breeding," after which Prof. J. A. Ferguson spoke on the subject of "Forestry and the Farmer," which he illustrated with slides showing the difference between farms on which forests were properly handled compared with those that were neglected. On Wednesday evening, Dean A. Holmes addressed a large audience in the opera house on "The American Boy." He spoke for an hour and a half, during which he pictured the life of the boy from childhood to maturity. On Thursday evening Prof. W. H. Tomhave gave an illustrated lecture on a view of "Chinese Agriculture."—T.

FEDERAL AGRICULTURAL APPROPRIATION

The agricultural appropriation bill passed by the last session of Congress carried a total of $17,986,945 for the work of the Department of Agriculture. The item for the annual distribution of free seeds, which the Senate struck out, was restored by the House, and Congress will continue the farce of sending free seeds to constituents. The McLean amendment establishing federal control of closed season for hunting game birds and for migratory birds was retained. An item of $75,000 for suppression of hog cholera was carried. Interstate shipment of any worthless, contaminated, dangerous or harmful virus, serum, toxin or similar products intended for use in treatment of domestic animals was made unlawful. A sum of $50,000 was made available for a division of markets in the agricultural department, but the provision for separate division for work was thrown out. A separate sum of $25,000 was included for use of a commission to investigate co-operative land-mortgage banks and similar institutions and for increasing agricultural credits. The bill also provides $1,000 to purchase an oil portrait of James Wilson, the retiring secretary, who holds the longevity record for cabinet service.

NEW BULLETINS

Manure Conservation.—Bulletin 221 of the Wisconsin Experiment Station, Madison, Wis., gives the following rules for handling manure: "Provide water-tight floors or gutters back of the animals. Use bedding enough to absorb all of the liquid excrement. Where the fields are fairly level, apply the manure as fast as it is made. Where it is impossible to haul the manure directly as it is made, pile it in a large compact pile, round or rectangular, but with perpendicular sides and at least six feet high. Keep the manure compact and moist. When stored under a shed, it is also necessary to keep the mass compact and moist. When the manure must be stored, mixing the excrement of the different classes of farm animals will help insure a moist mass. Reinforcing the manure with rock phosphate (40 lbs. per ton) and with gypsum (20 to 40 lbs. per ton) is sound practice. These materials can be mixed with the manure at the time of applying it to the land, or in the barn as the manure is produced. Sprinkling them in the gutter or on the manure at the rate of 1 to 1½ lbs. per 1,000 lbs. of animal weight is also good practice."

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Grange

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THE NEW ADMINISTRATION

We are now living under an administration differing in political complexion from those of the past 16 years. Thanks to the increased intelligence of the American people, the country passed thru the strenuous campaign and the revolutionary result without fear or a slump in business, something without a parallel in our history.

Yet our increased feeling of brotherhood makes us realize our kinship and that we have a common need; that one-half our people are not desirous of crippling or destroying the other half. Hence we can understand the happy acquiescing in the result and the generous expression of confidence and good-will.

President Wilson's inaugural, while not committal in detail, breathes a spirit of high purpose. The following extracts from his inaugural address may well be adopted by the grange and its individual members as a working text:

"We have a body of agricultural activities never yet given the efficiency of great business undertakings or served as it should be thru the instrumentality of science taken directly to the farm, or afforded the facilities of credit best suited to its practical needs; watercourses undeveloped; waste places unreclaimed; forests untended, fast disappearing without plan or prospect of renewal; unregarded waste heaps at every mine.

"We have studied, as perhaps no other nation has, the most effective means of production, but we have not studied cost or economy as we should, either as organizers of industry, as statesmen or as individuals. Nor have we studied and perfected the means by which government may be put at the service of humanity, in safeguarding the health of the nation, the health of its men and its women and its children, as well as their rights in the struggle for existence.

"This is not a day of triumph; it is a day of dedication. Here muster not the forces of party, but the forces of humanity. Men's hearts wait upon us; men's lives hang in the balance; men's hopes call upon us to say what we will do. Who shall live up to the great trust? Who dares fail to try? I summon all honest men, all patriotic, forward-looking men, to my side. God helping me, I will not fail them, if they will but counsel and sustain me."—R. P. Kester.

McSPARRAN'S GRANGE NOTES

A New Basis of Taxation

When the tax system under which the taxes in Pennsylvania are levied and collected was inaugurated, a division of property was made by which it was established that real estate should pay the local taxes and personal and corporate property should pay the state taxes. This was an equitable division at the time. The value of the two classes of property held a relation to the taxes raised by each that made the burden of taxation rest comparatively equal. But yet it was a great mistake to make any such arbitrary division. A mistake because it would hardly be possible that thru a long period of time these classes would continue to possess equal value; and the precedent of the legal, altho arbitrary division, would prevent an equitable adjustment if any inequality should arise.

This is just what has happened in Pennsylvania. The value of the personal and corporate property has far surpassed the value of the real estate, and altho a tremendous inequality has existed for a generation or more, yet no law has been passed that would correct this obvious injustice. The grange has tried to get a measure of equalization of taxation by asking for appropriations that would relieve local taxation, but that has not been sufficiently successful to really bring about any considerable equalization.

We are glad to note that a radical adjustment of the tax situation is again before the legislature in the form of H. B. No. 383. It can not become a law without a powerful sentiment back of it. The corporate interests are deeply intrenched and they do not intend to let the advantage they now enjoy get away from them if possible. It therefore behooves us as farmers, who are and have been bearing so large a share of the tax burden, to work up this sentiment. It will not be enough to simply ask your member of house and senate to vote for this bill, but it should be discussed at grange meetings, at farmers' institutes and in the local papers until such a sentiment is aroused as will compel the legislature to listen to this just demand. It ought to become a law with practically no opposition, because it would benefit not only the country but the home owners of the city as well and the would-be home owners especially (for this injustice is one reason why many who could do not own their own homes). All of these are vitally interested in an honest basis of taxation, and yet even a mill for schools and roads has been persistently denied by legislature after legislature.

There is another benefit to be derived from a system of taxation based upon the value of property by public assessment. The corporations have not had any actual value placed upon their properties, and it seems to me that there are many questions in relation to our dealings with corporations that can not be rightly solved until there is a physical valuation of all property by an outside board of assessors. Some of us have not forgotten that the two-cent fare bill was killed in the courts when the court that declared the rate confiscatory did not know the value of the property that was to have been confiscated by the operation of the two-cent rate. And so the court became the tool of the corporation by passing judgment upon something they knew comparatively nothing about. If the corporations are not over-capitalized, a public investigation and assessment would set such charges at rest; and if they are, it is about time that some of this water was squeezed out and that the public should have a means of knowing what is the actual profit that is being made by these enormous aggregations of capital.

The real estate people have the votes, and there is no valid reason why the tail should continue to wag the dog indefinitely. Now is the time to correct the mistake that was made when our tax system was established. The bill may need amendment, but in principle it is right.—John A. McSparran.

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HANDLING THE LAMB CROP.

By Prof. W. H. TOMHAVE, State College, Pa.

It is said that the "Lambing Time" is the shepherd's harvest, and much of his success depends upon his ability to take care of the flock at that time. The ewes should receive a little extra care previous to and at the time of lambing, in the form of feed and quarters. When the ewe is about to lamb, it is well to reduce her feed to about one-half the normal ration, and continue her on such a ration for a few days following lambing. The ewes are consequently kept in a much better physical condition and there is less danger from milk fever or caked udders. Caked udders are in a large measure due to an over-supply of milk or when there is more than the young lamb is able to take. They are also frequently caused by lying on wet floors or places in which there is a strong draught, and such conditions should be avoided by proper location of pens and keeping them well bedded.

Separate lambing pens are desirable, as they make it possible to remove the ewes at that time from the rest of the flock. When lambs are weak at birth, it is advisable to put them in a warm room until they can move about. Often times they need help to get their first meal, after which they will take care of themselves. When such is the case, the new born lamb should be helped to the nurse and a portion milked into its mouth. The wool around the udder should be trimmed away, which will make it easier for the lambs to nurse, and also keeps the udder much cleaner.

The young growing lamb is considerable of a drain upon the mother. To keep her in good condition and at the same time supply plenty of food means liberal feeding. The ration should be made up of grain, roughage and succulent feed of some kind. A grain mixture made up of three parts corn, three parts oats, three parts bran, and one part oilmeal or cottonseed meal is a desirable mixture. Good clean clover or alfalfa hay, and some good silage, makes an excellent combination for ewes that are rearing lambs.

Sunshine and exercise are as essential for growing lambs as the food they consume. Both should be provided at all times as well as dry and clean pens. An open yard in which they can play during the middle of the day is necessary to insure a strong lamb crop. When lambs are kept under such conditions they will begin to eat a little grain when a couple of weeks old. This should be encouraged, as it relieves the ewe of the burden and also aids in the more rapid development of the lamb.

A mixture made up of two parts bran, one part oats, one part corn meal and one-half part oilmeal makes a splendid later feed. As soon as the lambs will eat grain they should be provided with a separate pen, which can be had by means of a "creep." By a "creep" we mean a place where the lambs can get at the feed trough at will, but where the ewes and the rest of the flock can not get thru. These may be made by partitioning off a small pen and nailing strips upright far enough apart so that the lambs can get thru. The opening should be high enough so that the lamb can get thru with ease and not be compelled to stoop. In this way the lambs will get a much better start in life than where grain is withheld.

We still find on many farms and markets every year a large number of lambs that, for some reason or other, have not been castrated or docked as lambs. The former is possibly due to the fact that it was thought best to keep the lamb for a ram, and later he did not develop into a good enough individual, and so was put in the feed lot. For the latter there can, however, be no excuse except that of carelessness on the part of the breeder. All sheep should be docked because it is economical and beneficial from every point of view. A sheep that is not docked usually has several pounds of manure on the fleece and tail during the winter, making it disagreeable to handle, besides being an unsatisfactory animal for breeding purposes or for the feed lot. All ram lambs in the flock should be castrated, unless they are purebred and are to be kept for breeding purposes.

A BUNCH OF GOOD LAMBS ON A BLUEGRASS PASTURE.

Lambs should be docked and castrated when they are about ten days or two weeks old. Little or no loss should occur from this operation, provided it is properly performed on lambs at about that age. The easiest and most satisfactory method of castrating young lambs is by drawing the testicles. Lay the lamb on its left side, and with a sharp knife cut off the top of the scrotum and draw the testicles. The cord will break readily and there will be but little trouble from loss of blood. It is well to apply a little tar or dip of some kind to the wound. Dock the tails at about 1 to 1½ inches from the body. For this use a sharp knife or a chisel, and put the tail on a solid block to perform the operation. Newly docked or castrated lambs should never be permitted to stay in pens or lie in places that are filthy. Bright sunny days should be selected for castrating and docking, as rainy or cloudy days are apt to chill the lamb and cause a loss.

Clover or alfalfa pastures are a cheap means of growing the lamb crop. No person should attempt to raise a flock of sheep unless some kind of pasture can be had. Where permanent pastures are lacking, annual forage crops should be grown. Oats and Canadian peas, sown at the rate of 2 bushels oats and 1½ bushels peas per acre, make excellent summer pasture. Winter rye, sown in the fall, provides the earliest pasture of the annual crops. The same field can later be sown to corn or rape, which will furnish late summer and early fall pasture. Clover, alfalfa and bluegrass make excellent pasture for sheep and should be made use of. Old pastures, that have been closely pastured by a flock of sheep for some years, should be avoided in handling a thrifty flock of lambs. Such pastures may be infested with stomach worms and would cause serious loss to the lamb crop.

The lambs should be weaned when from four to five months of age. At this time they should be supplied with a fresh pasture that has plenty of tender grass. This may consist of second-growth clover, drilled corn, rape or any succulent grass obtainable. They should also be continued on a small allowance of grain made up of a mixture of oats, corn, bran and oilmeal or cottonseed meal. If the flock is purebred, the rams and ewes should be separated at weaning time. The rams, if they are to be sold for breeding stock, should receive a little extra care so as to get them in shape for the fall market.

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Registered DUROCS, all ages. Rhode Island Red Eggs, 17 for $1.00 or $4.00 per 100. W. F. HARSHMAN, Lewistown, Maryland.

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Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., March 17, 1913.

The butter market was somewhat dull, but is expected to recover and strengthen during the current week. Under moderate receipts, eggs advanced 15c per case. The demand for dressed poultry was sufficient to absorb the limited receipts, and prices remained at about last week's figures.

Butter.—Western creamery, 38½c; extras, 36½c; firsts to seconds, 30@35½c; special prints, 43@46c; near-by prints, 40c.

Cheese.—New York full cream, 18c; skims, 11@14c, according to quality.

Eggs.—Candled, 22@24c doz.; extras, 20c. Current receipts at $5.25@5.55 per standard case.

Poultry.—Fowls, 17@19c; old roosters, 12@12½c; spring chickens, 18@19c; ducks, 18@19c; pigeons, 18@25c pair; turkeys, 19@20c.

Dressed Poultry.—Western fowls, 16@18c; roosters, 14c; chickens, 19@20c; turkeys, 20@25c.

Vegetables.—White potatoes, choice, 68@73c bu. Onions, 15@30c bu. Cabbage, $6.00@8.00 ton. Lettuce, $1.00@1.75 basket. Cucumbers, $2.75@3.50 basket. Celery, 25@60c bch. Spinach, 80c@$1.15 bbl. Kale, 75c@$1.00 bbl. Egg plant, $1.50@2.00 box. String beans, $2.00@3.00 bu. Peas, $2.00@4.00 basket. Peppers, $1.50@1.75 carrier. Tomatoes, $1.00@1.75 carrier.

Fruit.—Apples, choice varieties, 25@75c hamper, $2.00@3.50 bbl. Cranberries, $5.00@8.50 bbl. Strawberries, 20@35c qt.

Hay and Grain.—No. 1 timothy, new, $17.00@17.50; No. 2, $14.50@15.50; No. 3 do., $12.00@13.00. No grade, $8.00@10.00. Clover mixed, No. 1, $14.00@14.50; No. 2 do., $12.00@13.00. No. 1 tangled rye straw, $13.00@13.50; No. 1 wheat straw, $10.50@11.00; No. 1 oat straw, $10.50@11.00. New shelled corn, No. 2 yellow, 56@57c; No. 3 yellow, 54½@55c. No. 2 red wheat, 97@98c; No. 3 do., 95@96c. No. 2 white oats, 39@39½c. Standard white, 38@38½c; No. 3 white, 36¼@37½c.

Hides and Skins.—Steers, abattoir, 15¾@16¾c; do. country, 13¾@14¼c. Cows, abattoir, 14¾@15¼c; do. country, 13¼c. Bulls, abattoir, 12¼@12¾c; do. country, 11¼c. Calf skins, Nos. 5 to 12 and up, $1.35@2.45; do. green, 13@14c lb.

Seeds.—Timothy, $3.15@3.25 bu.; clover, white, $25; do. crimson, $6.25; do. mammoth, $14.50; do. sweet, $13.00; do. alsike, $13.25; red top, per bu., $13.50; alfalfa, $7.00@10.00; Canada field peas, $2.35; vetch, $8.50; rye, winter, $1.35; spring, $2.25; soy beans, $3.25; barley, $2.50; buckwheat, $1.50; cowpeas, $3.00@3.25; millet, $1.90@2.75; oats, $1.25; wheat, $1.70@2.00.

Coffee.—Rio, 7s, 11⅝c; Santos, 4s, 13⅝c; Mild Coffee—Cordova, 15@17c.

Provisions.—City beef, smoked and air-dried, 22@23c. Beef hams, 31@33c. Pork, family, $21.00@22.00 bbl. Hams, cured, 14½@15½c; skinned, 14½@15½c; smoked, 17@18c. Other hams, smoked, city cured as to brand, 16@18c. Picnic shoulders, 9¾@10¼c; do. smoked, 11½@12c. Bellies in pickle, 14@15½c. Breakfast bacon, as to quality, 17@22c. Lard, refined, 11¾@12½c; do. in tubs, 11½@12c; do. kettle rendered, 11½@12c. Tallow, prime city, 6⅞@7c; do. country, 7c; do. dark, 5¾c; do. cakes, 7¼c.

Sugar.—Cut loaf, $5.15 cwt.; cubes, $4.60; powdered, $4.45; granulated, $4.35; standard granulated, $4.40; crystal A, $4.35.

Flour.—For 196 lbs., in wood, winter clear, new, $4.00@4.25; do. straight, new, $4.40@4.60; favorite brands, $4.85@5.25. Rye flour, Penna., $3.50@3.65.

BALTIMORE PRODUCE

Baltimore, Md., March 17, 1913.

There was a good demand for butter and prices remained firm. Under greater receipts eggs were easier and only the choicest stock brought top prices. Dressed poultry was in light receipt at steady sale.

Butter.—Creamery, fancy, 36@37c; do. choice, 35@36c; prints and blocks, 35@38c; Maryland and Penna. rolls, 20@22c; prints, 20@21c. Process, 25@27c.

Cheese.—Flat, 17½c; Daisy, 18@18½c.

Eggs.—Md. and Penna., firsts, 17c; western, 17c; southern, 16c.

Live Poultry.—Hens, 18c; chickens, 20@21c; old roosters, 11c. Turkeys, 24@25c. Ducks, 16@20c. Geese, 14@15c. Guinea fowls, 20@30c.

Dressed Poultry.—Turkeys, 24@25c; chickens, 20@21c; roosters, 11@12c; ducks, 20@22c; geese, 11@17c.

Vegetables.—Potatoes, white, 55@60c bu. Sweets, $2.25@2.75 bbl. Cabbage, $1.25@1.35 crate. Danish, $7.00@8.00. Onions, 25@40c bu. Lettuce, $1.25@2.00 basket. Egg plant, $2.00@2.25 crate. Peppers, $1.25@1.75 crate. Squash, $1.50@2.00 basket. Spinach, 40@50c box. Cucumbers, $3.00@3.50 basket. Beans green, 2.50@3.00 basket. Celery, $1.50@2.25 crate. Turnips, 15@20c box. Cauliflower, $2.50@2.75 bbl. Horseradish, $1.25@1.75 box. Beets 25@35c bu.

Fruit.—Apples, new, $2.00@3.50 bbl.; 50c@$1.00 bu. Cranberries, $8.00@9.50 bbl.

Grain.—Wheat.—No. 2 red western, $1.05; spot, $1.04¾. Corn, spot, 53¾c; contract, 53¾c. Oats, No. 2 white, 39c; standard white, 36½@36¾c; No. 3 white, 35½@35¾c. Rye, 55@65c.

Hay and Straw.—No. 1 timothy, $18.00; No. 2 timothy, $16.00@16.50; No. 3 do., 13.00@14.50. Choice mixed, $15.00. No. 1 clover, $11.50@12.00. No. 2 do., $9.00@10.00. No. 1 tangled rye straw, $12.50@13.00. No. 1 oat straw, $9.00@10.00. No. 1 wheat straw, $8.50@9.00.

Millfeed.—Spring bran, $22.50@23.00. Middlings, flour to white, $26.00@28.00; western middlings, $23.00@23.50; city mills mids., $24.00@24.50.

NEW YORK PRODUCE

New York City, March 17, 1913.

The supply of butter during the week was ample and prices remained unchanged on most grades. The egg situation is not encouraging for future shippers. Receipts are heavy and much stock is now on hand. Dressed poultry remained about as last week.

Butter.—Creamery firsts to extras, 34½@36c; thirds to seconds, 30@34c; factory, 20@24c; state dairy, 24@35c; packing stock, 18@22½c; process, 21@28½c.

Cheese.—Whole milk special, 17@17¾c; do., common to fancy, 15@17c; skims, 5@14c.

Eggs.—State and near-by, 20@24c; fresh gathered, 14@20c; mixed, 19@19½c; refrigerator, 11@15½c.

Dressed Poultry.—Turkeys, dry, 19@24c; chickens, Penna., 15@28c; fowls, 14@17c; old roosters, 13½c; ducks, 15@20c; roosters, 19@22c.

Live Poultry.—No quotations.

Grain.—Easy. Wheat, No. 2 red, $1.09; No. 1 Northern, $1.00¼. Corn, 56¾c. Oats, standard white, 39c.

Vegetables.—Potatoes, state, $1.70@1.80 per 165-lb. bag. Cabbage, $1.00@1.25 crate; do. Danish, $7.00@9.00 ton. Green beans, $2.00@4.00 basket. Carrots, 75@85c bag. Cucumbers, $1.00@1.50 dozen. Lettuce, 75c@$1.50 bbl. Squash, $1.50@2.00 bbl. Celery, $1.00@4.00 case. Horseradish, $2.00@4.00 cwt. Parsnips, 75c@$1.00 bbl. Turnips, 35@75c.

Fruit.—Apples, $1.75@4.00 bbl., according to variety. Pears, 50c@$1.10 basket. Cranberries, $6.00@10.00 bbl.

BUFFALO PRODUCE

Buffalo, N. Y., March 17, 1913.

Butter.—Active. Creamery choice, 37@38c; choice dairy, 31@33c.

Cheese.—Quiet and easier. Fancy, 17½@18c; good, 16½@17c.

Eggs.—Steady. Fancy, 23@24c; state, candled, 22@23c; storage, 18@20c.

Dressed Poultry.—Steady. Turkeys, per lb., 23@26c; fowls, fancy, 17@19c; chickens, 16@20c; old roosters, 13@14c; ducks, 21@24c; geese, 17@18c.

Live Poultry.—Active. Chickens, 17c; ducks, 19@21c; geese, 15@17c; turkeys, 20@23c.

Vegetables.—Potatoes, slow. Home-grown 58@60c bu. Cabbage, 50@75c per bbl. Onions, 30@70c bu. Beans, green, $2.75@4.00 hamp. Turnips, 75@80c bbl. Celery, 50@75c doz. Lettuce, 40@70c.

Beans.—Quiet, steady. Marrow, fancy, $3.35@3.40; medium, $2.40@2.45; red kidneys, $2.00@2.50.

Fruits.—Apples, $2.25@3.25 bbl.; 50@75c bu.

Honey.—Firm. No. 1 fancy, 17c; No. 3 new, 13@15c; dark, 12c.

Hay.—Weak. Timothy, choice, on track, $17.50; No. 2 do., $16.00; No. 3, $15.00; light mixed, No. 1, $13.00@14.00; rye straw, $10.00; oat and wheat straw, $9.00@9.50.

Feed.—Steady. Spring bran, $21.00 ton. Standards mids., $21.50. Corn meal, $23.50. Gluten, $26.75. Hominy, $24.25. Oilmeal, $29.50.

YORK PRODUCE MARKETS

York, Pa., March 17, 1913.

The markets are without change, except in the egg trade. Receipts were more than normal, but buying was slow until they reached the 16 and 17 cent mark, when trading was brisk until all stocks were disposed of. Butter remains firm with supply equal to the demand. In a week or two the markets will take on new interest when the first home-raised produce will be placed on sale from the early hot beds.

Butter.—Country, 32@34c; separator, 33@35c. Milk, 6c per qt.

Eggs.—16@20c doz.

Poultry.—Hens, 15@16c. Dressed poultry, 40@90c.

Vegetables.—Potatoes, 10c half peck; 50@60c bu.; cabbage, 3@6c each; lettuce, 5@10c; beets, 3@5c bunch; radishes, 2@5c; turnips, 6@9c per ½ pk.; onions, 10c per ½ pk.; lima beans, 12c qt.; soup beans, 10c qt.; sweet potatoes, 10c per half peck; spinach, 10c per ½ peck; parsnips, 10c per ½ pk.; sauer kraut, 5@8c qt.; lard, 14@16c lb.; corn meal, 5@6c qt.

Fruit.—Apples, 10@25c a half peck; pears, 15c per ½ pk.; chestnuts, 15c qt.; walnuts, 15c per ½ peck; strawberries, 20@25c box.

Retail Grain Market.—Wheat, $1.13; corn, 68c; oats, 50c; bran, $1.30 a cwt.; rye, 78c; middlings, $1.40 a cwt.

Wholesale Grain Market.—Wheat, $1.03; corn, 56c; oats, 40c; rye, 68c.

WASHINGTON PRODUCE

Washington, D. C., March 17, 1913.

Eggs.—Near-by, fresh, per dozen, 17c; southern, per dozen, 17c.

Cheese.—New York, new, per pound, 18c; flat, 18c.

Butter.—Best prints, per pound, 39c; tub, 38c; process, 27@28c; undergrades, 25c.

Live Poultry.—Hens, per lb., 18c; roosters, 10c; springers, 20@23c; turkeys, 20@22c; geese, live, 12@15c; ducks, 16@18c.

Vegetables.—Potatoes, bbl., $1.25@1.50; 50@80c bu. Onions, 50@80c per 100-lb. bag. Lettuce, per bas., $1.00@1.25. Beans, $2.00@5.00 basket. Peppers, per crate, $1.00@1.50. Egg plants, per box, $1.50@2.00. Squash, per bbl., $1.50@2.25. Beets, 50c@$1.00 per 100 bchs. Mushrooms, per lb., 25@40c. Carrots, 1½@2½c bch. Cabbage, $1.50@2.00 crate. Radishes, 50c@$1 per 100. Cauliflower, $1.25@1.75 crate. Apples, $1.50@4.50 bbl.

WILMINGTON PRODUCE

Wilmington, Del., March 17, 1913.

Trading on the markets during the week was normal, and prices remained at about last week's figures. Eggs are more plentiful and the demand for chickens, both live and dressed, has somewhat declined.

Fruits.—Apples, 50@75c basket; $2.75@4.00 bbl. Strawberries, 30@40c box.

Vegetables.—Potatoes, 75@80c bu.; $2.00 bbl. Cabbage, 75c@$1.00 bbl.; 25c basket. Onions, 40c basket. Celery, 60@85c doz. Spinach, $1.00 bbl. Sweet potatoes, 75c basket; $2.50@3.25 bbl. Kale, 75c bbl. Lettuce, $1.25@1.50 basket.

Poultry.—Chickens, live, 16c; do., dressed, 18c. Ducks, 12@13c lb.; dressed, 16c.

Eggs.—18@19c; storage, 16@17c.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., March 17, 1913.

The cattle market during the past week was steady at about last week's prices.

	Beef Cattle	Sheep and Lambs	Hogs
Total for week	5,297	12,327	5,352
Previous week	4,998	11,363	4,580

Best steers	$8.75@9.00
Choice steers	8.50@8.62½
Good	8.00@8.25
Medium steers	7.25@7.50
Common steers	6.50@7.00
Bulls	4.75@6.50
Fat cows	4.50@6.50
Thin cows	3.00@3.50
Milk cows	40.00@65.00

Veal calves are firmer.

Best calves	$11.00@11.50
Good to choice do.	10.00@10.50
Medium	7.00@8.00
Common do.	6.50@6.75
Thin do.	5.00@8.00

Sheep and lambs are dull and easier.

Extra wethers	$7.25@7.50
Choice wethers	6.75@7.00
Good wethers	6.00@6.50
Common to medium	3.00@5.50
Ewes, fat	5.50@6.00
Extra lambs	9.50@9.75
Good to choice do	9.25@9.50
Common to medium	6.00@8.50

The hog market continued firm thruout the week, westerns selling at $13.00.

City Dressed Stock.—Choice classes of dressed meats are steady. Trade is normal. Steers, 10@13c; heifers, 9@12c; cows, 7½@10½c. Veal calves, 14@16c; country dressed calves, 13@14½c; extra do., 15c. Sheep, 10@11c; extra wethers, 12c. Spring lambs, 15@17c. Hogs, 13¼c.

BALTIMORE LIVE STOCK

Baltimore, Md., March 17, 1913.

Beef receipts for the week were 2,226 head. The market is steady.

Steers	$4.75@8.25
Heifers	4.25@6.75
Cows	2.00@5.40
Bulls	4.35@6.75
Fresh cows	27.50@77.50

Sheep and lamb receipts were 4,644 head. Under a light supply the market is strong.

Sheep	$3.75@7.00
Lambs	6.50@9.65

There were 11,784 hogs on sale during the week. Under greater demand for all classes of stock, the market has advanced and is firm.

Light western	$10.00@10.05
Heavy to medium	9.75@10.00
Near-by	9.75@10.00
Roughs	8.75@9.00
Pigs	9.00@9.75

Calf receipts for the week were 372 head. Most of the receipts were of unattractive stock, and under a light supply the market is higher at $6.00@11.75.

NEW YORK LIVE STOCK

New York City, March 17, 1913.

Cattle receipts for the week were 5,530 head. The market is irregular.

Steers	$6.00@9.50
Bulls	5.50@7.25
Cows	3.50@6.60

Dressed beef firm. Native sides, 11@13½c; Texas, 9@10½c.

Calf receipts were 3,797 head. The market is strong.

Choice veals	$13.25@13.50
Good veals	9.00@13.00
Culls	7.00@8.50
Barnyard calves	5.00@6.50
Fed calves	7.00@9.00
Westerns	3.50@5.00

Dressed calves are strong.

City-dressed veals	15½@19½c
Country-dressed veals	11½@17½c

Sheep and lamb receipts were 9,194 head. Sheep are steady and lambs lower.

Sheep	$5.00@6.75
Culls	3.50@4.50
Lambs	8.00@9.40
Culls	6.00@7.50
Yearlings	6.50@8.00

Hog receipts were 8,233 head. The market is higher.

Light to heavy	$9.75@10.00
Roughs	7.75@8.00

PITTSBURGH LIVE STOCK

Pittsburgh, Pa., March 17, 1913.

Today's receipts of cattle were 80 loads. With a good demand the market ruled active and strong on bulls, while fat cows and heifers sold steady to strong. Best grades of fresh cows are steady, but springers and medium fresh cows are barely steady.

Good to choice	$8.70@9.05
Good, 1300 to 1400 lb.	8.50@8.70
Medium to good, 1200-1300 lb.	8.00@8.35
Tidy, 1050-1150 lb.	8.30@8.45
Fair to medium, 900-1100 lb.	7.50@8.00
Common to good fat oxen	5.00@7.00
Common, 700-900 lb.	5.60@6.75
Common to good fat bulls	4.00@7.25
Common to good fat cows	4.00@7.00
Heifers, 700 to 900 lbs.	5.00@7.85
Bologna cows	3.75@4.25
Fresh cows and springers	20.00@80.00

Calves.—Receipts were 600 head. The demand was good and the market ruled active and steady.

Heavy and thin calves	$5.00@7.00
Veal calves	8.50@12.00

Hogs.—Today's hog receipts were 45 double-deck loads. The market has been very high under a rather irregular condition of supply and demand. Prices dropped some toward the close of last week. The market was 5 to 10 cents higher today than last Saturday.

Prime heavy	$9.55@
Prime medium weighs	9.80@
Heavy mixed	9.70@
Best heavy Yorkers	9.80@
Light Yorkers	9.80@
Pigs as to quality	9.70@9.80
Common to good roughs	8.00@8.65
Stags	7.00@7.50

The supply of sheep and lambs today was 20 double-deck loads. The market ruled active and steady on all best handy sheep and lambs, but heavy sheep were slow sale and barely steady.

Prime wethers	$7.00@7.25
Good mixed	6.50@6.80
Fair mixed ewes and wethers	5.75@6.40
Culls and commons	3.00@4.50
Spring lambs	6.00@9.25
Culls to choice lambs	5.50@9.00

BUFFALO LIVE STOCK

Buffalo, N. Y., March 17, 1913.

Cattle receipts today were 2,700 head. The market has been strong for some days past. Best grades are in good demand.

Choice heavy steers	$8.75@9.00
Medium	8.50@8.75
Yearlings	7.75@8.75
Plain heavy	7.75@8.00
Handy butchers	7.25@8.15
Good to choice fat cows	6.25@6.75
Good to choice heifers	7.75@8.75
Butcher bulls	6.00@7.00
Feeders	7.00@7.75
Stockers	6.25@7.00
Cows and springers	40.00@85.00

Trade in calves has been easy for the greater part of a week. There were 1,300 head on sale today, and the market remained steady and firm.

Choice veals	$12.50@13.00
Light and thin	4.00@6.50

The warmer weather last week made the market slow. Toward the close the demand was light and prices eased up. There were 14,000 head on sale today and prices remained steady.

Choice lambs	$9.00@9.25
Poorer grades	6.00@6.50
Yearlings	8.00@8.50
Wethers	7.25@7.50
Ewes	6.50@6.75
Sheep	6.75@7.00

Hog receipts were liberal all last week, but the demand was active and the basis 10 cents higher. The general trade is good on heavy hogs. With 11,200 head on sale today, prices took another boost.

Heavies	$9.60@9.70
Mixed and medium	9.60@9.70
Yorkers	9.60@9.70
Light Yorkers	9.70@9.75
Pigs	9.70@9.75
Roughs	8.50@8.75
Stags	6.50@7.50

ELGIN BUTTER QUOTATION

Elgin, Ill., March 17, 1913.

The quotation committee of the Elgin Board of Trade this afternoon declared butter firm at 34c a pound.

NEW YORK MILK QUOTATION

The wholesale milk price is $1.71 per 40-quart can for class C; class B, $1.81.

PITTSBURGH HAY AND GRAIN

Pittsburgh, Pa., March 17, 1913.

Good hay is being disposed of at top prices, altho poor grades are hard to dispose of at satisfactory prices. Threshed and poor clover hays are dull. Straw receipts are ample. Market is dull and prices lower. No. 1 timothy, $15.00@15.50; No. 2 do., $12.50@13.50; No. 3 do., $10.00@11.00; No. 1 light mixed, $13.50@14.00; No. 1 clover mixed, $13.50@14.00; No. 2 do., $10.00@12.00. No. 1 clover, $13.00@13.50; No. 2 do., $8.00@10.00. No. 3 prairie, $9.50@10.00; No. 4 do., $7.50@8.50; No. 1 oat straw, $8.25@8.50; No. 2 do., $8.00@8.25; No. 1 wheat, $8.25@8.50; No. 2 do., $8.75@9.00. Ear corn arrivals are in strong demand. Market much improved. No. 2 yellow, 54@55c; No. 2 high mixed, 52@53c. Shelled corn receipts are ample. Market is very quiet. No. 3 yellow natural, 53@53½c; sample, 52@52½c. Oats are dull in sympathy with other markets. No. 2 white, 36@36½c; standard, 35¼@35¾c; No. 3 do., 34@34½c; No. 4 do., 32@33c. The demand for middlings is very slow, but bran has improved. Market dull. No. 2 white mids, $24.00@24.50; No. 1 brown mids., $21.50@22.00. Winter wheat bran, coarse, $22.00@22.50; do. medium, $21.00@21.50.

TOBACCO MARKET

Market conditions were practically unchanged during the week, except there was even less buying than in recent weeks. It is now evident that the remaining 20 percent of crop must be carried by growers for some weeks to come. In the general tobacco markets conditions were farther improved, with an active demand for leaf stocks to replenish the rapidly decreasing supply of factories which are now experiencing much activity.

The Lancaster County Tobacco Growers' Association held an important meeting. Reports from various points indicate but little if any change in market conditions. A member from Manor reported one-half of hail cut tobacco unsold and present prices about $7 and $3, one crop selling at $8. Another from Christiana said that sales were made as low as $5. At Colerain, $8 to $9 is being paid, while at East Earl all is sold except one crop, the owner of which refused $10.50 at one time and $8.50 more recently.

At the same meeting the burning qualities of Pennsylvania tobacco were given extended attention. It was found that conflicting opinions exist as to the cause of poor burning qualities. It seems, however, to be generally conceded that muriate of potash and chlorine have an unfavorable influence upon burning qualities. It was also agreed that some strains are superior to others in this respect, thus showing the importance of proper seed selection. The character of soil was very fittingly given as a contributing influence. It was stated that excessive ammonia, which is simply too much nitrogen, has an unfavorable influence by causing a coarse, rank growth. Magnesia and sulfuric acid are also injurious, it was stated. The character of the growing season is given as another factor. It was argued that a main cause of poor quality is insufficient plant food and poor cultivation. Still another opinion was that tobacco is cut too early. Of course, it is understood that desirable burning quality is shown in the cigar by its tendency to hold fire and ashes, the latter to be light and uniform and not char in burning.—H. E. Tweed, March 17, 1913.

PENNSYLVANIA CORN DAY

Friday, February 28th, was "Corn Day" at the Pennsylvania State College. Taking advantage of an opportunity to exhibit at the College the grain exhibited at the State Corn Show, recently held in Harrisburg, and also the grain exhibited at the recent National Corn Show, in Columbia, S. C., the School of Agriculture and Experiment Station was able to give the farmers who attended the show an idea of what could be accomplished in Pennsylvania and the country at large in the matter of corn growing.

Special trains were run into the college from various points in the state, and several hundred farmers took advantage of rates thus offered. Several addresses by members of the faculty of the School of Agriculture supplemented the corn exhibit. In the morning, Mr. H. P. Davis, of the Department of Dairy Husbandry spoke on "Silos and Silage." He spoke at length on the value of silos in taking care of the problem of rations for the farm live stock, and outlined some of the points to be considered in their construction.

In the afternoon Mr. W. H. Darst, of the Department of Agronomy, addressed the farmers on "Selection of Seed Corn." His remarks were an attempt to answer the question, "What sort of an ear should be selected for seed corn?" He emphasized the importance of the proper sized ear to mature under different soil and climatic conditions, the value of the characters to be considered in seed selection, including uniformity of ear in shape, size of kernel and color of grain in order to get the best results.

Mr. C. F. Noll next spoke on "Care and Testing of Seed Corn," placing special stress upon the importance of drying out seed corn before cold weather sets in, deprecating the practice of placing the corn in piles, or otherwise storing it so that the air can not have free circulation around it, and advocating the use, if necessary, of artificial heat in order to dry the corn thoroly. He brought out the fact that corn thus artificially dried at the College Experiment Station had, for the last three years, outyielded by from two to five bushels an acre the corn dried under ordinary methods.

Professor F. D. Gardner, head of the Department of Agronomy, closed the speakers' program with his address on "More Corn Per Acre." Professor Gardner placed stress on the value of gradually increasing the corn acreage as well as increasing the production per acre; on the value of shortening rotations in order to have corn occur more frequently in the rotation, and on the value of corn growing in general because it gives a greater energy value per acre, as well as a greater money value per acre than any other staple crop grown in Pennsylvania, with the exception of potatoes.

One of the noticeable features of the day was the attendance of many of the younger generation from the farm and the interest they evinced in both the show and the methods outlined and suggested by the speakers. It is the hope of the authorities at the agricultural school that many boys' corn clubs may result from the work of Corn Day at the College.

The attendance for the day was about 400 people, showing that the farmers are thoroly interested in affairs of this nature. After the regular program of the afternoon those who desired further information were provided for by various members of the faculty, and those desiring to look further over the workings of the agricultural or other departments of the college, were escorted around by guides.

The corn show idea carried out at State College is the first of its kind to be carried out in any of the eastern agricultural institutions, and was probably first conceived by Dean Watts, the head of the Agricultural School. It is quite likely that it will take its place with some of the other annual affairs at the College.—C. M. Arthur.

COUNTY NOTES

Chautauqua Co., N. Y. (S. W.), Mar. 3.—Weather cool; some snow. Stock in good condition. Prices rather high. Cows, $40 to $75; horses, $150 to $250; veal calves, 10c lb.; dressed pork, 10½c; poultry, live, 13c; dressed, 18@20c; eggs, 20c; salt pork, 14c; apples, 60c bu.; potatoes, 60@75c; hay, $15 at barn. Work well along, owing to the open winter. Wheat looking good so far. Cherry and peach buds are good. Grapes promise only medium crop.—J. L. Barber.

Warren Co., Pa. (N. W.), Mar. 3.—Weather mild. Stock looking well and selling high. Eggs, 22c; butter, 35c; pork, 11c; hay, $16; straw, $12; corn meal, $21.00. Farmers busy hauling lime and phosphate. Roads fairly good.—Clyde Firth.

Chester Co., Pa. (S. E.), Mar. 4.—Weather alternately warm and cold. Beef high in price. Milch cows scarce and high. Hogs increasing in price. Hay market dull. Poultry 15c lb., live. Farmers are hauling manure and plowing. Conditions are good.—Hayes C. Taylor.

Lancaster Co., Pa (S. E.), Mar. 6.—Weather clear and cold at present. February was rather mild, with plenty rain and little snow. Live stock is in good condition. Good, fresh cows bring as high as $75 and $80. Stock bulls are scarce and high. Fat hogs, 10c lb.; shoats scarce and high; wheat, $1.03; corn, 55c; hay, $14@15; straw, $9@10; butter 35c; eggs, 20c. Winter wheat, looking good. Ice houses are filled. Stock and clearing out sales are the go. Some tobacco to strip, and much unsold. A few farmers are plowing and getting in shape for the spring work.—J. Henry Haverstick.

Armstrong Co., Pa. (S. W.), Mar. 6.—Weather cold, stormy and changeable. Live stock fairly plenty. Hogs, 10c lb. dressed; fresh cows, $50 to $75; hay, No. 1 timothy, $16 ton; mixed clover and timothy, $15 ton; straw, $13; potatoes, retail, 90c to $1 bu. Work is held back on account of weather conditions. Hot beds started. Large amount of posts cut.—Arthur R. Allshouse.

Crawford Co., Pa. (N. W.), Mar. 6.—Weather 10 above zero. Good sleighing. Stock looking well. Cows, $50; veals, 9c; dressed pork, 10c; eggs, 22c; butter, 30c; apples, [illegible]; potatoes, 50c; hay, $11; chickens, live, 12@13c. Farmers hauling manure, wood and logs. Quite a few farms changing hands. Public sales plenty.—J. F. Seavy.

Camden Co., N. J. (S. W.), Mar. 6.—Weather for the last week has been fairly good. Live stock is looking fair to good. Fresh cows, $40@60; horses, at public sale, western, $200 to $240. Wheat is looking well; the fields are taking on a greener shade. Eggs, 25c doz.; potatoes, 40c bas.; dressed poultry, 20c to 25c lb. Farmers are starting in the fields with plow and harrow.—W. R. Stafford.

Harford Co., Md. (N. E.), Mar. 5.—Weather exceptionally fine; looks as if spring had opened in good condition. Horses and dairy cows bringing good prices; mules very high. Hogs in good demand and high. Wheat looking good, where not sown too early. Good prospect for clover. Much plowing and spring work done, owing to the open winter.—D. G. Harry.

Putnam Co., N. Y. (S. E.), Mar. 10.—Weather changeable; very cold at present. Eggs, [illegible] doz.; butter, 40c lb.; hogs, 10c lb.; potatoes, $2.75 bbl.; chickens, 20c lb., dressed. Hay, $24 ton. Farmers have been busy cutting ice and filling their houses. Most of them obtained a good crop. Roads in fair condition.—Wm. Seims.

Carbon Co., Pa. (E. C.), Mar. 10.—Weather generally mild, with several severe cold snaps thru February; no snow. Potatoes still [illegible] wholesale. There was a grange organized at Big Creek during February; another is being organized at New Mahoning. All our rural districts now have telephone connection. Everybody pruning and preparing to spray.—Brice Brenckman.

Delaware Co., Pa. (S. E.), March 8.—Weather very changeable. Stock in good condition. Veal calves, 10c; horses high; eggs, [illegible] store; hay not wanted at $15; straw is in big demand. Not much spraying completed. Peach buds quite advanced and many dead.—Chester W. Ambler.

Clearfield Co., Pa. (C.), Mar. 8.—Weather cold and [illegible]; zero weather. Live stock in fairly good shape for spring. Crops looking bad; no snow all winter. Hay, loose, $15; baled, [illegible]; straw, $12; butter, 38c; eggs, [illegible]; potatoes and apples, 80c; corn, 75c; wheat, $1; buckwheat, 65c; dressed poultry, [illegible]. Some manure being hauled. Contracts being made for fertilizer. Tenants making early contracts and moving.—J. M. Rowles.

Cattaraugus Co., N. Y. (N. W.), Mar. 7.—March is coldest month of the winter. A great deal of sickness. Cows are freshening and cheese factories are starting to make cheese. Cows have wintered well, and are in great demand. Eggs, 21c; butter, 30c; potatoes, 70c in trade. Ice houses are nearly filled. We are scheduled for a state road from Hinsdale thru to Franklinville thiis summer.—Geo. E. Kellogg.

Luzerne Co., Pa. (E. C.), March 6.—Weather mild and stormy. Live stock rather scarce. Winter grain looking fairly well. Wheat, $1; corn, 80c; rye, 80c; potatoes, 65c; oats, 45c; timothy hay, $18. Farm work advancing slowly; roads very heavy.—N. C. Brown.

Erie Co., Pa. (N. W.), Mar. 8.—Weather cold; about 1½ feet of snow; good sleighing. Live stock of all kinds wintering well. Dairy cows are high; selling from $35@80; butter, 35c; eggs, 22c. Some damage has been done to stored cabbage by freezing and thawing during the early part of the winter. The farmers are busy cutting wood, hauling logs and doing other winter work. A few have tapped their sugar trees. On the dairy farms young calves and fresh cows are demanding much attention now.—L. Howard Morton.

Berks Co., Pa. (S. E.), Mar. 12.—Weather spring like; rain about every third day. Horses bring good prices. Cows sell from $60 to $90; wheat, 98c; corn, 55c; oats, 40c; eggs, 22c; potatoes, 50c. Winter wheat looks fine, never better. Farmers are getting ready to plow for oats.—H. A. Deisher.

Adams Co., Pa. (S. C.), Mar. 10—Weather made sudden change from cold to warm. Crops going back. Live stock doing well and bringing high prices at sales. Crops suffering on account of extreme warm and cold weather. Wheat, $1; corn, 55c; oats, 40c; eggs, 20c. Feed prices reasonable. Farmers generally up with work. Sales good and well attended; roads in bad condition.—R. D. Myers.

Bedford Co., Pa. (S. C.), March 11.—Weather, with exception of a few snow flurries, has been fine. Horses not in such great demand at present. Cattle high. Grain is looking good, considering the amount of hard freezing and bare ground the past winter. Spraying season will soon be on hands, which must not be neglected by the progressive fruit grower, if he wants to grow perfect fruit.—N. F. Richards.

Union Co., Pa. (C.), Mar. 3.—Weather cold; very little snow. Live stock looking fine. Wheat in ground looks well. Live stock scarce and high. Horses sell from $100 to $300; teams, $400 to $700; cows, $40 to $100; spring pigs, $2 each; chickens, 14c lb.; calves, 8c; hogs, dressed, 10c; beef, 9c; milk, 4½c qt. and $1.75 cwt.; butter, 36c lb.; eggs, 20c; wheat, $1.01; corn, 60c; oats, 45c; rye, 70c; hay, $16 to $20; straw, $8 to $10 ton. Most ice houses filled with ice from 4 to 10 inches thick. Roads are in bad condition.—H. Lee Herman.

Erie Co., N. Y. (W. C.), Mar. 1.—About 20 days in February make up all the winter so far. On that account we ought to look for a severe March. The thermometer has been up close to 60 degrees several times, and there is report of injury to the pear buds, but no complaint is heard of either apples or peaches. Winter wheat is having a hard time of it, but it so often happens that a little snow falls before a thaw sets in, that it may come out all right. There has not been a really heavy fall of snow yet this winter. Rain has often been copious. Hay, fruits and vegetables go down in proces when they should advance at this time of the year.—J. W. C.

The Oviduct of the Hen.—More than half the weight of a normal hen's egg is elaborated by the oviduct. Hence this organ plays a very important part in egg production, and its functions and structure should be studied by every poultryman. Bulletin 206, of the Maine Experiment Station, Orono, Me., discusses the physiology and functions of the oviduct of the hen in relation to egg production, and contains many instructive and interesting photographs.

Grangers Oppose Liability Law.—In line with similar action in several other counties, the Pomona Grange of Monmouth Co., N. J., has gone on record as being unalterably opposed to the present employers' liability law. Accidents in the haying field, among fruit pickers, etc., led to such action. Yet it seems to the writer that the repeal of those provisions which relate to farm laborers and the confirmation of all the others, smacks too much of special legislation.—D. T. H.

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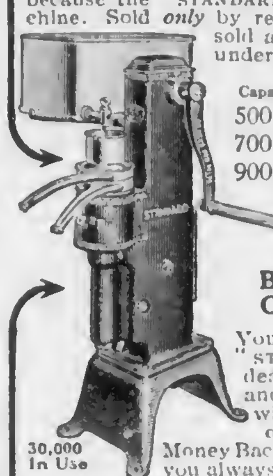

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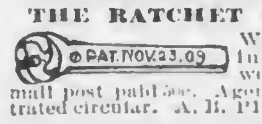

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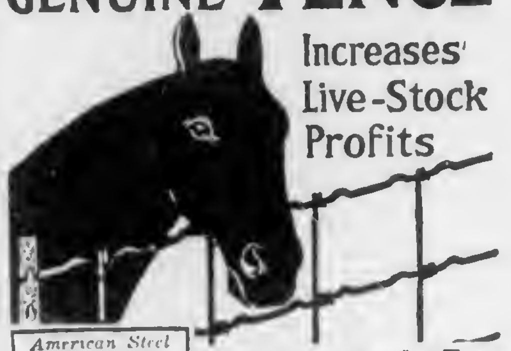

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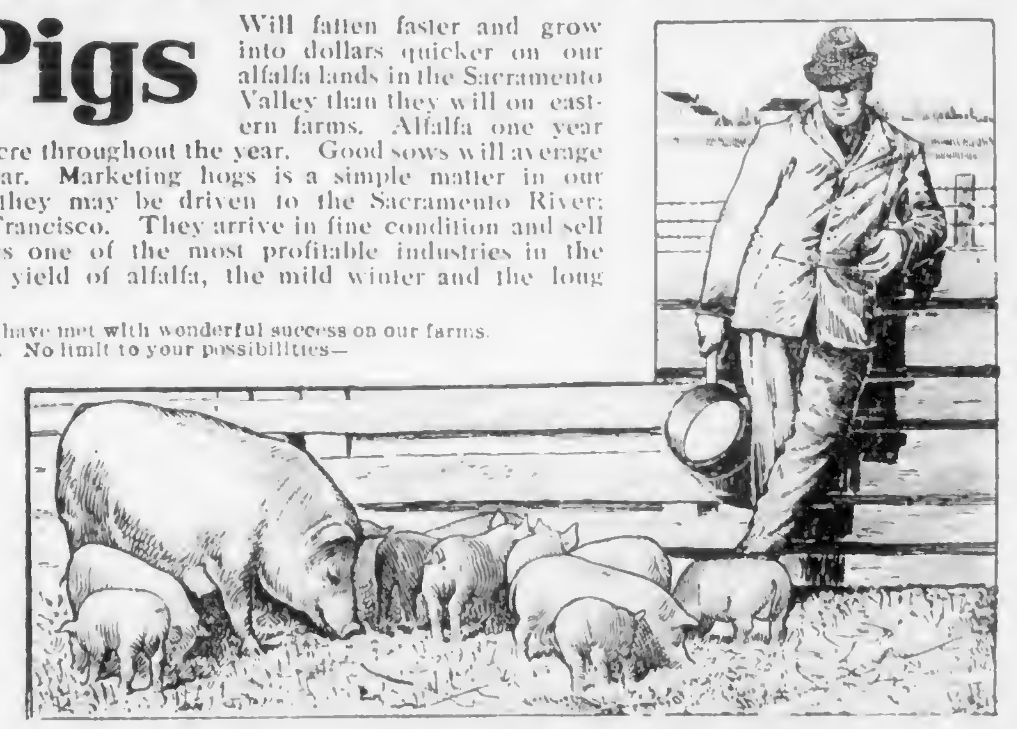

THE CAPTAIN AND JULIET

By T. A. TEFFT.

(Continued from last week.)

Captain tried hard to please Juliet, but did not succeed. She tried each one, but after one or two turnings of her person in the nest that he had been so enchanted at finding, two or three sittings down and getting up, she would jump out again and walk away in disgust, while he, undiscouraged, began his hunt and excitement again, uttering as he jumped in and out of new places, a never-ending ripple of the gayest and most persuasive notes, notes which only a rooster in love with a hen will use, and then only when he thinks that no one is listening. If he suspected Caroline was watching him, or if he heard the slightest movement to betray her presence, he would stop suddenly, straighten himself, look at her squarely in the face, and then begin to crow—so loudly, so harshly and with such ear-splitting fierceness, that if for a moment you had suspected him capable of another and more beguiling tone, he would have you believe yourself altogether mistaken.

Nothing downstairs suited Juliet that morning. She wanted the hayloft. So, after exhausting the floor below, they mounted the steps together, she to lay her egg at last on the very edge of a pile of loose hay that was sure to be disturbed when the cow was fed. Even then she would not quite settle herself, but sat half upright, turning her head and glancing about her, as if too nervous to keep still. But then nothing ever did satisfy Juliet, altho she was always allowed her own way in everything.

The Captain, seating himself beside her and seeing how nervous she really was, began to talk. "Eh, eh, eh, eh," he kept saying, his tones gentle, down deep in his throat, tender and full of ever-changing and amazing inflections. He did not even mind Caroline being present, either, knowing she was safe.

Caroline more than once saw him in the hayloft beside her, waiting for the crucial moment, afraid of the wild scream and bumping about, determined to ward off another attack, for Juliet he knew by this time would never cackle like any other hen. And then such delight as was his when the egg was laid, as if hers were the only one in the world, and her laying it one of the wonders. Such cooing and caressing notes as he uttered over her! Such ingenuity as he displayed in keeping her attention! He would jump heavily from step to step on his way down the stair again, and give rippling notes of invitation, as he stopped on each step to scratch among the seeds; or jump down on the next, just as delighted, when in her nervousness and excitement she would go ahead, ready to fly off in another attack unless he was vigilant.

The fact that Juliet was hysterical, and had neither beauty nor self reliance never affected him, as why should it? As for her, she made no effort to depend upon herself in crises, thinking, no doubt, that when the strong were about, it were just as well to be weak and appealing. The other hens, however, could not have been as blinded as the Captain, for whenever in answer to a call from the other side of the fence he was forced to absent himself for a morning, leaving Juliet alone, they would chase her about the yard, pecking at her so hard that before long a bare spot began to appear on her back.

She never resented an attack; it not being her way to resent. She would let them all peck at her, while she crouched flat on the ground as if too frightened to move, but always as she turned her head with its dangling red comb to glance about her, on the lookout for some rooster to whom she could fly for protection a young one, of course, old roosters having no interest for her.

When she spied one whom she thought desirable, she would scream and rush toward him, crouching at his feet as she had crouched at those of the Captain. She usually chose the young gray cock with the feathery legs, a vain and idle rooster who tried (when the Captain was not there, of course) to imitate him in everything, putting on no end of fine airs, and scratching for Juliet as the brave fighter himself was accustomed to doing.

When—the morning's skirmish over—the Captain came home, his invariable habit, whatever his wounds, was to stand for a moment on the top notch of the gate post, and from this vantage place to survey his own dominion. Seeing Juliet, he would jump quickly down and hasten toward her with that magnificent stride that was always his when a battle had gone well. As she stood surprised beside the young gray cock she would regard the Captain in a frightened way, thinking, perhaps, he had meant to stay away longer! After that with a scream (screams, Caroline had discovered by this time, were her specialty), she would jump away from her youthful companion as if he had been detaining her, and crouching at the Captain's feet, look up at him in a way that never yet had failed to bewitch him. She did it so quickly that he never had time to think of what she might have been doing in his absence, and she did it so humbly that he never missed a tribute to his excellence.

PART II

People to whom Caroline tried to tell the story of his folly and devotion, used to laugh at her. One hen was like another to them, except that some laid better eggs. Anything like the power of Juliet to affect so great a fighter as the Captain was laughed at as the fancy of a child.

The story of the Captain's powers was another matter. Everyone believed in that, since everyone was military. It was the boy who milked the cow who first told it. There came a time that summer when the Captain would be spirited away, to be gone for a day at a time. Caroline learned long afterward that he used to be borrowed for fights, the soldiers in the barracks stealing him at night to match him with some cock of their own.

He had been gone for days, that was all Caroline knew, as she hunted everywhere for him. Juliet did not care, and when Caroline cried people said that "after all, he was only a rooster." So she went off by herself in the hayloft, thinking over her troubles, and was sitting there with swollen eyes, having quite given him up, when she chanced to look toward the darkest corner, where in two huge bins the corn and bran were kept, some old garden tools being stored among the cobwebs on top.

Something unusual held her gaze, and she continued to look, fascinated altho not quite seeing. Gradually the outlines of a familiar figure, sitting grim and silent, began to be defined. Frightened, unwilling to believe her own eyes, she crept toward the corner and looked. Not a sound broke the stillness, nor did a movement betray the presence of a living creature. Yet it was the Captain. She could see him clearly enough at last; not the Captain as the barnyard knew him, erect, dauntless and magnificent; but the Captain prostrate, forlorn, all but dead as he lay hidden behind the garden tools and up among the cobwebs, his head drooping, his eye dull, refusing to answer even her.

Caroline crawled into the bin, took him in her arms, soothing him as best she could, asking him questions that he could not answer. Out by the light of the window, she sat down, holding him in her lap, and then she saw that he was sorely wounded. His comb was bleeding, his eye torn, and more dreadful than all, his upper bill had gone. He had fought until his wounds had overcome him, but whether, the battle over, the boy who milked the cow had brought him back; or the soldiers who had stolen or who had borrowed him for a fight; or whether he had crawled home by himself to die where he had lived with Juliet, she never knew.

He let her bathe his head and bandage his spurs, and as he could not feed himself, he let her give him water with a spoon, and feed him with soft mashes that she put down his throat. Some of the soldiers who came to see him laughed at Caroline for her pains, saying he would never be good for anything again. So after that she locked them all out. No one should see the Captain in his weakness who had praised him in his strength. No one should laugh, either. The Captain was her friend. Beside, what did it matter to her whether he fought more battles or not. She hated battles, and she loved the Captain. His life was all she asked for.

Many a day he was too listless to notice her coming and going, altho he let her do for him what she would, and seemed to take some strange comfort in her ministrations. It was delightful to see him greet her in the morning, grimly, as became a fallen Captain, but eagerly for all that, taking the food and water she gave him, and as his appetite returned, enjoying them, following her about with his eyes when she fixed his food, and afterward on foot, altho slowly, having but little strength. The days she spent nursing him were happy. She wanted no other diversion. For hours she would hold him in her lap, or sit silently beside him. Weeks passed by.

At last health and strength returned, a new bill was grown, and the Captain was himself once more. Someone told Caroline that new bills were never grown on roosters, that they always died of such disasters. Perhaps this is true; perhaps, too, no one ever nursed a disabled rooster as she nursed the Captain.

During all of the time of the Captain's seclusion, Juliet betrayed not the slightest concern. The young gray cock was always with her, she being one of those hens who must always have a young attendant in her train. Instead of coming to the hay loft to lay her eggs where the wounded Captain was suffering, she went as far as possible out of sight, creeping under the barn floor for her nest. Once Caroline caught her in her arms and tried to carry her upstairs to him, knowing what a sight of her face with that red comb of hers dangling half over one eye would mean to him, but just as she reached the lowest step (Caroline believes now that Juliet knew what she meant to do) she uttered the wildest of screams and flew out of her arms, round and round the barnyard as if she had just laid an egg. Suffering always upset her. Caroline hoped the Captain would discover what kind of a hen she was, having hysterics as she did whenever things happened not quite to her liking, and she hoped that he would find her out when he came downstairs again.

But this is what happened.

He had descended quietly, and was standing on the threshold of the barn door early one morning, as Caroline opened the gate. His searching eye was as clear as of old, his carriage as fearless, and his head was held in that proud way of his which lent him such distinction. During his absence much had happened. Upstarts of young roosters had become self-appointed leaders; hens had arranged themselves in different followings. The Captain wanted to take note of them all. Nothing was quite as it had been except the stone wall, the willows, the gate where Caroline stood watching, nothing else—except Juliet. Her comb was as red as of old and flapped as gaily when she walked. Her feathers were as black, although as he looked closer he could see that the bare spot on her back had grown.

In the other days she had been the first to see him, having always that alertness of vision which those of uneasy minds possess, and never knowing just at what moment he might come home and surprise her. The young gray cock was with her.

She looked up at last. Perhaps she heard his step, for he strode rapidly toward the two, anger filling his eye, his old air of the fighter full upon him. He was looking at the young gray cock, not at Juliet. The young gray cock saw him, stopped a moment to measure the Captain's strength, then turned about and fled, coward and sneak that he was.

Juliet was unable to move. It was to her as tho the Captain had risen from the dead. She saw the anger in his eye, the pride and mastery of his bearing. What terrible things must have rushed thru her mind! What fears! What admiration! All the old respectable hens, clear of conscience, stood ready for a climax, uttering the roulade of warning notes, and stretching their necks to look toward him.

As he came nearer, grim, terrible, but magnificent, Juliet gazed at him like one fascinated, and then—just as Caroline was prepared for she did not know what—Juliet screamed like a hen frightened off her nest, and, rushing toward him, crouched low at his feet. She was clever.

Caroline wanted to drive her away, she had been so neglectful, but already the Captain was happier than all her care and devotion had succeeded in making him. He walked about her with that old, inflated sense of happiness which a vision of her never failed to give him, his feet lifted breast high, his toes turned in with enchantment. She pretended to be happy enough, too, putting her face, with its dangling red comb, close down by his on the ground when he began to scratch for her, the young gray cock off all alone on a hillock watching her. He knew his day was over. The captain took command again, and he and Juliet lived as they had done before. Often when she went under the barn floor to lay her eggs he went too, squeezing under there with difficulty on account of his size—a foolish thing to do.

One day in late summer when 16 of these eggs had been laid, Juliet to the surprise of everyone began to cluck, for Black Spanish hens are not given to setting. They will lay the eggs that you want, but somebody else must bear the drudgery of the family when it comes. The Captain was happy. He stayed at home and forgot no matter, wanting always to be ready when Juliet came off her nest for nourishment, as she did twice a day. He knew how important it was that setting hens should have the proper care. So he would feed her with choice bits, and then he would lead her about for air and exercise.

Juliet was still setting when a day of such exceeding heat came that the mountains at noon were covered with haze, and the plain glistened like metal in a furnace. The blinds of all the houses had to be closed to keep out the glare, and the hens in the barnyard, being too warm to scratch, sat about under the willows, their mouths wide open, their tongues showing as they panted for breath. The Captain alone seemed undisturbed. He sat erect, even while dozing.

Juliet's chickens were to be out that day. Caroline, on the stone wall in the shadow, was wondering how Juliet would behave as a mother, and what the Captain would do when he saw her leading her little ones about, like any other hen. It was all so quiet that she was near to dozing herself, when suddenly—it was always suddenly with Juliet—the wildest of screams was heard. Everyone started. The Captain opened his eyes and took a step forward. This time even he uttered a rapid roulade of rumbling notes. None knew what had happened until a black object with a dusty red headpiece appeared from under the barn floor and went screaming and bumping about the yard. It was Juliet, of course; Juliet too overcome with the heat to stay on her eggs any longer. The Captain did his best to coax her back again, using every wile of which a cock is past master, but she had had enough of sitting in hot weather, more than any other hen could have been expected to endure.

Even for the sake of her eggs, the Captain would not have fought Juliet, altho finding his efforts at coaxing her back quite futile, he crawled under the floor and sat there himself. Juliet did not mind! If he chose to sacrifice himself it was his concern, not hers. The weather being warm, the eggs happily were not injured, and when a plank in the floor was removed, and the eggs placed in a warm basket by the kitchen fire, they hatched out by themselves, with a little assistance from the cook. Every egg had a chick, so there were 16—not all black, tho! Caroline was sorry for that, knowing he would be sorry too.

To a sensible old gray hen who had began to cluck were given the chickens to care for. Juliet paid them no attention, altho she must have known, there being no other black ones in the yard. She was only glad to be out in the sunshine again instead of under the barn floor, and she spent her time roaming about with the Captain thru the garden beds, which, with the coming of fall, had been thrown open to the poultry. Color came back to her comb, the bare spot on her back disappeared, and as if to atone for her many defections she never left the Captain's side nor seemed to notice the young gray cock.

But the Captain would leave hers—not to fight nor to go off alone with any other hen, but to scratch for the little black chickens, leading them off so often that the old gray hen who nursed them took all the attentions to herself, thrusting her head back and forth with self-satisfaction when she walked.

Winter came early that year. By Thanksgiving snow was on the ground. On Christmas morning the mountains were covered and the river frozen solid. There were no longer any place in the barnyard for the hens to scratch, except in the stall with the cow, and no place to rest at noonday except under the eaves where the melting icicles cleared a space below.

One afternoon when the cold was so great that Caroline's fingers stuck to the iron latch of the chicken coop door, she drove them all to bed early. An hour afterward she went out with her lantern to see how they were. The perches were covered with hens and roosters who, looking very stupid and half frozen, were huddled together trying to keep themselves warm. Juliet sat muffled up between the young gray cock and an old brown hen who in summer had picked her, but who now when winter had come was glad enough to get near her, the blood of the Black Spanish being known to be warm. The Captain was not on his perch, but on a nest in the corner, his great wide wings spread over Juliet's chickens, spread so wide, indeed, that he must have been half freezing himself; but to this he seemed to pay no attention.

At nine that night she went again. Everything was as it had been, the hens and roosters huddled together on their perches, too cold to sleep, the Captain still on the nest, his wings stretched wide. He raised a head at her lantern and opened a dazed eye, but that was all; he, too, she inferred, had not slept.

The perches were still full when Caroline went to let them out in the morning, altho they came when she called, Juliet and the gray cock leading. He was always hungry. Usually it was the Captain who first answered her call, coming directly to eat from her lap as he had done from the day of their first acquaintance; but altho they all filed out in careless fashion, one pushing by the other, while she stood calling his name, he made no sign. The old gray hen came, and the little black chickens. Juliet, warmed by her hot breakfast, began to be gay, and the young gray cock stood up and crowed.

By this time Caroline was frightened and went into the coop. The Captain was still on his nest, his great wings outspread; he did not look up, his head was drooping. She bent over him, touching him and calling him by name. He made no answer. He was cold and hard, and his head when she lifted it fell back.

There was no doubt of it now. The Captain was dead. He had frozen to death trying to keep Juliet's chickens warm—Juliet outside and not caring at all; Juliet, who had passed by and left him on her way to her breakfast. Caroline picked him up in her arms and carried him out.

"Juliet," she called. She never turned, nor did one of the hens who had loved him, nor one of the roosters who had feared him in his might.

"You are a bad, wicked hen, Juliet!" she shouted, crying there over the dead Captain whom she held in her arms. Not even then did she turn.

She was walking off with the young gray cock, pausing now and then to put her face close down beside his on the shoveled path, where he pretended to be finding surprises for her. She paid no heed to Caroline, nor did she seem to see in her arms the body of the dead warrior, who, when living, had given all his strength and devotion to her service.

Suburbanite (to visitor)—Oh, how are you? Come right in. Don't mind the dog. Visitor—But don't he bite? Suburbanite—That's just what I want to see. I only bought that watch dog this morning.—Le Rire.

The story is told of a Congressman that he once declared in an address to the House, "As Daniel Webster says in his dictionary." "It was Noah who wrote the dictionary," whispered a colleague, who sat at the next desk. "Noah nothing," replied the speaker. "Noah built the ark."

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Household

ENTERTAINING AT EASTER

By Marjorie March

The calendar gives us Easter once more, when the rising of spring and its wealth of flowers bespeaks the glory of growth's reappearance. The hostess who plans some sort of festivity during the Easter holidays can not go far amiss, for there are Easter traditions a-plenty to help her with novel ideas, and Easter flowers and favors to aid her in decorating. For an Easter party of fun and pleasure the invitations may be sent out on cunning little cards cut in basket shape, the top decorated with water colors in violets, daffodils or Easter lilies. The wording of the bidding may be written on the basket, which may be slightly tinted, or the whole may be made simpler by using some of the effective Easter cards, to be found in the shops at this season of the year, on which to offer one's hospitality. Another quaint idea would be to mail in a small box one of the little fluffy chicks made of cotton, tying a card about his neck on which the invitation may be written, or a small box of candy eggs mailed to a friend will prove a delightful puzzle if one word of the invitation is written on each egg so that they have to be arranged properly before one can read the message.

A BUNCH OF SPRING FAIRIES.

Decorations

All the decorations of house and feast can bear some significant touch The illustrations show a pretty centerpiece for an Easter luncheon, and a cake which may be used as a centerpiece or on a side table as preferred.

The first depicts an odd pottery vase filled with lilies, a ''Sprite'' of Springtime seated on each lily. This can be made into a pretty gift device if wished, the fairies having the names of the guests written on their sprites and each guest taking a lily. Found closely tied to the stem may be a long thin package containing a gift. These gifts may be pencil holders, flower pins or hat pins.

The white Easter cake is particularly pretty, ornamented on top with lilies of frosting. Ribbons reach to tie to little flower pots each holding a hidden gift, and ornamenting its top, a paper lily ''growing'' from this gracious root. The gifts enclosed in the pots may be larger and of varied shape and kind, but either idea makes a novel one for the distributing of favors at an Easter function.

Suggestions for Tables

Lilies and their leaves laid in an effective mass in the center of a spotless white cloth, look beautiful for an evening affair, tall glass candlesticks with white tapers rising from their midst. A single white lily, real or artificial, can be at each cover, and an Easter card tied to the flower with white ribbon can show the guests their places. White baskets with frills of white paper make very pretty bonbon dishes, and ices, cakes and all fancy touches to the feast may be served in white lily cases.

A Violet Table

A beautiful luncheon table may be arranged by having lace doilies over violet silk. In the center of the table a round mirror edged with smilax and small bunches of violets may reflect a ''shower bouquet'' of violets which hang from the chandelier. Long streamers of pale tinted violet ribbon may hold bunches of violets with their leaves, hanging to different lengths above the mirror, but all, of course, reflecting their beauty. About the edge of the ''pool'' fairy paper dolls dressed in gold and violet can be seated. Tiny vases as souvenirs at each plate may hold a small bunch of violets, and the bonbon dishes may be tall stemmed glasses resting on little violet edged mats, or on smaller doilies over voilet silk.

A Nest Table

A nest with pretty grasses filled with colored eggs makes an attractive centerpiece that will please the children as well as the grown-ups. If the decorations are desired elaborate, have strings of baby ribbon extending from the chandelier to the four corners of the table, these ribbons knotted at intervals to hold in place colored egg shells which have been emptied of their contents and strung on ribbon in this way, a knot below each egg keeping it from slipping. Easter rabbits at each place with little baskets on their backs can hold Easter egg candy, and the doilies under the plates may be of pure white paper, cut in egg shape.

AN EASTER LILY CAKE.

The dessert may be a gelatine dessert which has been tinted different colors and moulded in egg shells. Turn out on a decorative platter and pile whipped cream about the edge. Pretty little Easter cakes may be served with this dessert. Ice small cakes and in the center of each stick half an egg shell, with a ragged edge, the ragged edge uppermost. In this little vase place a bunch of flowers, or, if preferred, a fluffy cotton chick or a candy chick can be placed therein.

Daffodil Table

The table cover can be white over pale yellow silkoline, or if a hostess desires, may be of crepe paper variety with a daffodil design. In the center of the table have a vase filled with daffodils, the bunch tied with a bow of golden ribbon. As souvenirs at each plate have little yellow and white baskets filled with bonbons of the same color. Have a pretty little yellow chick poised on the handle of each basket. Daffodil cases may be the receptacles for salted nuts, bonbons, etc.

Games to Play

The old-fashioned donkey game can be utilized for an Easter games with success. Have a sheet decorated with a gay colored hen and some chickens. In the center of the sheet have a nest drawn. Give each person a paper egg and a pin and have them, while blindfolded, try to put their egg in the nest.

An Easter hat social is also fun for a group of ladies. Have little candy eggs hidden about the rooms which, when found are to serve as currency at the ''millinery store.'' At this store, which is a decorated table, can be sold dolls' hats, tissue paper, ribbon, artificial flowers, etc., and if the shopkeeper has a ready wit, and someone should be chosen who is gifted in this manner, the bargaining can be amusing indeed. When all have made their purchases, fingers will be busy fashioning the ''Easter millinery,'' and afterward a prize can be awarded to the one who has made the most fetching creation. The prize could be a cunning little doll's hat with ribbon strings formed over wire so that it makes it into the handle of a basket. In this can be a little flower pot with some growing flower, or the prize can be a box of candy, with a decorative cover of a pretty maid in a big poke bonnet.

If a luncheon precede this party, the guests can be asked to come attired in headgear that is unique, historical or effective in some manner. At a party of this sort the effect was very interesting. Quaker bonnets, Gainsborough hats, old-fashioned creations, sunbonnets and every imaginable style of headgear were worn, and the prize for the most striking costume was a dainty hatpin.

Flower Contest

Now that paper flowers can be bought ready to put together with ease a flower contest makes an amusing entertainment, particularly if the flowers can be used afterward for decorating some festal occasion. At one table violets can be made, at another daisies, at another carnations, and at the head table roses. Tiny rose sachet bags would make pretty souvenirs, or little violet amulets which hang about one's neck and give a subtle fragrance to one's garments.

CARE OF UMBRELLA

Most persons, when they come in, put their umbrella in the rack with the handle upward. They should put it downward, because when the handle is up the water runs down inside to where the ribs are joined to the handle, and there it remains, rotting the cloth and rusting the metal. The wire securing the ribs soon rusts and breaks. If placed with the handle down, the umbrella dries almost immediately.

SOME FAVORITE RECIPES

By Edith Charlton Salisbury

Ever since I was a young girl and began to take an interest in cooking I have felt that I was being especially favored when some housekeeper, with a reputation for fine cooking in our neighborhood, gave me one of her favorite recipes. Today, when I have many cook books and many friends who teach scientific cooking, I still know a feeling of sincere appreciation when some woman who loves cooking gives me her favorite method of preparing some dish which has brought her renown among her own people. And is that not, after all, the very best kind of fame? It's thoroly honest, at least. When the family anticipates a certain meal with unusual pleasure because mother or sister has prepared for it a special dish with a record for excellence, you can't blame that woman when she holds the formula for its unfailing excellence as one of her choicest treasures.

A few of those tried and never-failing recipes that have come to me from various sources I want to offer to the readers of the Household Department with the good wishes of housekeepers from far distant parts of the continent.

Batter Bread

This recipe for batter bread came from Georgia, the prize of one of those good old southern cooks whose ilk is fast disappearing from our midst. It's the real southern spoon bread, the kind we rarely see in the North unless some southerner makes it for us. In Virginia in ante-bellum days, it was always served with fried chicken and shirred eggs, and it is the bread of which Aunt Chloe used to say: ''I puts a dozen eggs in it when I kin git them, but when eggs is scarce, why, Honey, I makes pow'ful good bread wif only two or three.''

Pour about 1 cup of boiling water over ½ cup of stone-ground corn meal and 1 teaspoon of salt mixed with it. Cook in a double boiler for 15 minutes. Remove from the fire and add the yolks of 3 eggs, 1 cup of milk in which 1 teaspoon of baking powder has been dissolved, and 1½ tablespoon each of butter and lard. Fold in the stiffly beaten whites of 3 eggs and bake [illegible] hour in a granite baking dish, in a moderate oven.

One of the secrets which spell success with this bread is that the corn meal must be cooked before the other ingredients are added. It must be eaten as soon as it comes from the oven and, being too soft to cut as ordinary corn bread, is served in the granite dish in which it is baked, and removed with a spoon.

Dark Chocolate Cake

This recipe for chocolate cake is one of the best I ever used. It was given to me by a woman who lived in a picturesque little town far out on the Crow's Nest Pass in the Rocky Mountains. Follow directions carefully; do not let anyone persuade you that it is contrary to rules to use soda and sweet milk together. There is enough acid in the chocolate to unite with the alkali (the soda) in order to produce the gas which makes the cake light. Also you will have a darker, richer cake than when you use baking powder with sweet milk.

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Mahogany Cake.—Cream together 1½ cups of sugar and ½ cup of butter; add 3 eggs, one at a time, beating each into the butter and sugar as it is added. Dissolve 1 cup of grated unsweetened chocolate (about ¼ of a pound) in ½ cup of sweet milk, over hot water; add another ½ cup of milk to the butter and eggs mixture. When the chocolate is thoroly dissolved and free from lumps, add to the mixture. Sift together 2 cups of flour, 1 teaspoon of soda and 1 teaspoon of salt and stir in gradually. Pour into a sheet-iron dripping pan and bake one hour in a moderate oven. This makes a large loaf cake. To prepare the baking tin, grease it well with melted butter, then dust over bottom and sides with dry flour. This prevents sticking and makes a dryer, lighter crust on the bottom than covering the baking pan with buttered paper.

Cream Frosting.—Mix together 1 cup of granulated sugar and 1 teaspoon of cornstarch. Add 3 tablespoons of boiling water and set on the back of the range to dissolve. Then place over a hotter fire and boil 2½ minutes, taking the time when the syrup is bubbling all over the top. Remove from the fire and pour slowly over the stiffly beaten white of 1 egg. Continue beating until the frosting is stiff enough to spread, flavor with 1 teaspoon of vanilla and spread over the mahogany cake when it is cool.

Baked Calf's Liver

An excellent meat dish which originated in Alabama is baked liver. When one burns coal or wood in the range, and the oven is hot whenever there is a fire it is not only appetizing and nutritious but inexpensive.

Use a calf's liver, if you can get one. Wash it in cold water, then cut three or four gashes in the upper part of the liver, into which lay thin slices of fat pork; another slice of pork should be cut into small pieces to lay around the liver in the baking pan. Use either a covered roasting pan or stone crock for baking. Pour over and around the liver ½ cup each of diced turnips, carrots and celery, and half a cup of stewed tomatoes. Season with salt, pepper and a bit of bay leaf, and pour into the pan 1 cup of boiling water. Bake until tender in a slow oven, leave uncovered to brown during the last part of the baking. Serve on a large platter, surrounded by the vegetables.

Lemon Marmalade

In a little village in Ontario this recipe for lemon marmalade became famous. I am sure that anyone who enjoys a little marmalade with toast and coffee for breakfast will pronounce this quite to the king's taste.

Select 1 dozen smooth, firm lemons and 2 oranges. Slice as thinly as possible, using an ordinary vegetable slicer, which removes the seeds and the white center. Cover with 10 pints of cold water and let stand for 24 hours in a granite, porcelain or earthenware receptacle. Then boil rapidly for 2 hours; add 10 pounds of granulated sugar, first heating it in the oven and boil 20 minutes longer. Pour into well washed jelly glasses or fruit jars. Cover closely and keep in a dry, cool, dark place.

HOME NEEDLEWORK

A Hint to Busy Mothers.—When making garments for the little ones, try cutting out several at once. Take them to the machine and get them all ready for gathering; put on the attachment and proceed to gather all the sleeves at the top and wrists, skirts, ruffles and anything else that needs gathering, and you will find the work much more quickly finished than if you had cut and finished one garment at a time.

Laundering Centerpiece. — Always launder centerpieces or anything else with button-holed scallops before cutting out the scallops. The goods will shrink, and a firm, neater edge will be the result. The cutting is more easily done also.

Old Underwear.—When men's heavy underwear is too much worn for further use, cut the bottom of the undershirt off, add a little waist, and you have a nice warm undershirt for one of the little ones.

Wide Hems.—When turning a wide hem on a skirt or other garment, it is sometimes difficult to lay the extra fullness flat and in just the right place. Try gathering it, on the edge, then turn up the hem, push the fullness along to places where you would lay the plait, and stitch the hem. It looks much better this way, being smoother, and when ironed the gathers will not show thru as plaits do.

Buttonholes.—If troubled with buttonholes tearing out, run several strands of coarse thread around the hole near the edge; then work in the usual way over the strands.

BEAN SOUP

The excellent article on soups in the Pennslvania Farmer gave no recipe for bean soup. We think the soup we make most eatable. Recipe:

One cup of soup beans, soaked over night. In the morning place beans in a pot, covering with about three quarts of water; as it boils away, cover with a little more water. Chop into small pieces potatoes to fill a pint cup, two medium-sized onions cut fine, one pint of canned tomatoes, which must be put thru a sieve. Season with salt and pepper. Soon after the beans are placed on fire, put in about one-half pound of bacon or a ham bone. Just before serving, add about one pint of milk.—Elizabeth O. Jean.

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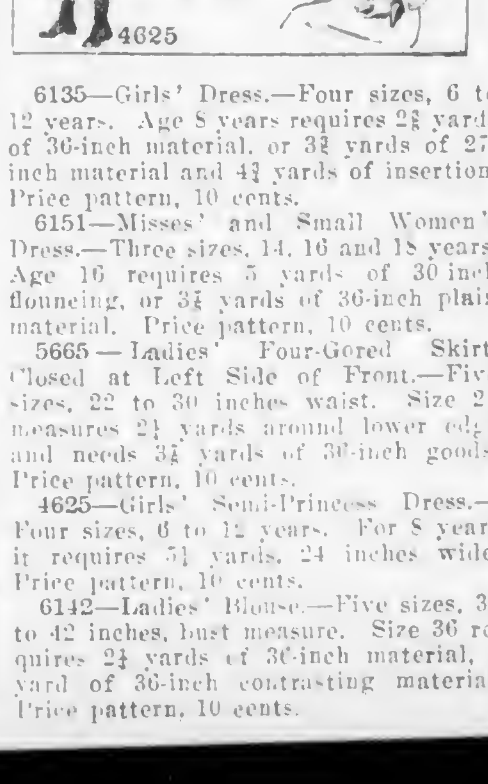

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Farmer Loveajoke—"Ha! ha! Here's a good one! A man was asked what a phenomenon was, and he said, 'Well, suppose you go down the road and see a cow. That's no phenomenon. You go a little further and see a bird. *That's* no phenomenon. But if you go a little further and see a cow sitting on a thornbush singing like a bird, *that's a phenomenon.*'"
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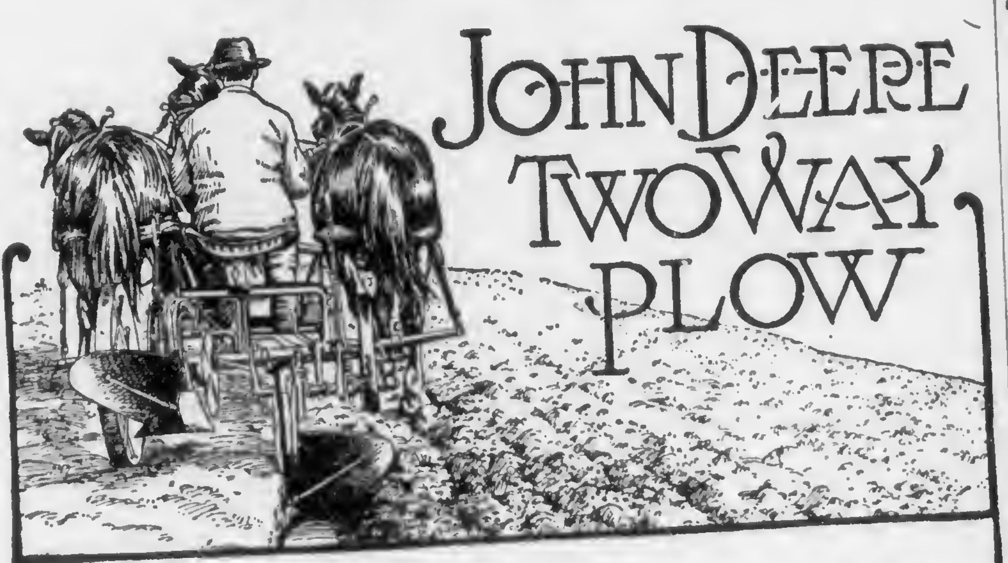
Acute Indigestion.—I have a 12-year-old mare that first had a bad attack of acute indigestion two weeks ago. Our local Vet. treated the case successfully, but she has had three attacks since. In case she may have another attack, I would like to know how to treat her. G. B. T., Meadville, Pa.—In treating acute indigestion, the first step to be taken is to arrest fermentation. Give 4 ozs. hypo-sulphite soda, dissolved in a pint of water, as a drench, and repeat in 30 minutes if relief has not been obtained. Or give 3 dr. salicylic acid, 1 dr. borate of soda, in a quart of warm water at a dose, every 30 minutes. There are many other remedies that are suitable, such as sulphite of lime, magnesium sulfate, boracic acid, cresylic acid, carbolic acid and coal-tar disinfectants that are all useful in controlling indigestion. It is always good practice to wash out rectum with soap suds. In some cases it is necessary to puncture the bowel in right flank, to allow gas to escape; however, this should not be resorted to unless it is seemingly justifiable and necessary.

Dislocation of Stifle.—My 18-month-old colt dislocated stifle joint some time ago. Our local veterinarian prescribed a blister, but the colt is not much better. Can you prescribe a remedy that will effect a cure? N. A. W., Girard, Pa.—Give colt 1 dr. ground nux vomica at a dose in feed, 2 or 3 times a day and apply equal parts aqua ammonia, turpentine and olive oil to spine and stifle joint, 2 or 3 times a week. Do not break him until he is sound.

Tongue Loller.—I have a horse that lolls his tongue when bit is in mouth. What is the cause of this habit? B. E. R., Washington, Pa.—Your harness maker can secure for you a spoon-bit that will prevent her from placing tongue over bit. Wearing a jaw strap to keep mouth closed will often prevent it, or suspending bar bit in roof of mouth, or using a crooked bar bit with space for tongue will often prevent it.

Diseased Udder.—My heifer came fresh a short time ago, but fails to give much milk out of one quarter of udder. The teat of this quarter is enlarged. She does not appear to be sick, and has a fairly good appetite. M. W. E., Cory, Pa.—Apply 1 part extract belladonna and 6 parts vaseline to udder, once a day. Give her 2 dr. potassium iodide at a dose in feed, night and morning. It is doubtful if you will be able to restore quarter to its normal condition.

Chronic Grease Heel.—My 6-year-old horse has been troubled with either scratches or grease heel for some time, and altho I have applied a great many different remedies, I fail to permanently cure him. I have succeeded in healing all sores, except one below fetlock, which is about the size of my thumb. I have applied sulfur and lard, turpentine and kerosene; also healing lotion, burnt alum and powdered blue stone. I have also applied acetate of lead, sulfate of zinc, blue vitrol and whiskey. I succeed in drying sore, but a scab will form over it and it refuses to remain healed. Part of time a fluid oozes out from under scab, then the sore opens. I have not worked him this winter, thinking I could cure him quicker if he is idle than if worked. He is in good flesh and appears to be in good health. V. D. Y., East Stroudsburg, Pa.—Chronic grease heel is difficult to cure; in fact, the skin can never be restored to its normal pliable, elastic condition, especially if the disease has existed for any great length of time. Apply 1 part iodine and 20 parts vaseline to sore, once a day, and give him ½ oz. Fowler's solution at a dose in feed, 3 times a day. If this iodine preparation fails to produce the desired results, apply equal parts tincture benzoin and glycerine, twice a day.



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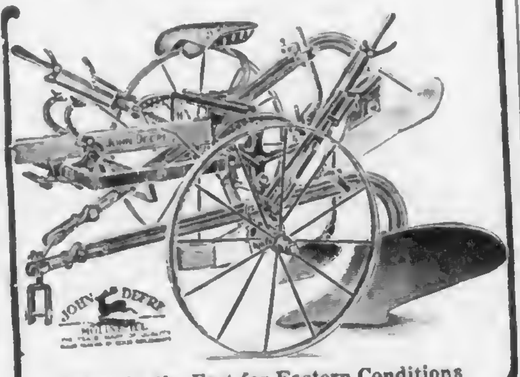

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ESTABLISHED 1880
PUBLISHED WEEKLY
VOL. 33.—No. 14.
PHILADELPHIA, PA., SATURDAY, APRIL 5, 1913.
50 CENTS A YEAR.

The Possibility of Apple Overproduction.

By Dr. J. H. FUNK, Berks Co., Pa.

NOTE.—From every source come inquiries as to the possible over-production of apples. Thousands and thousands of trees have been planted during the last few years, thousands more will be set in the next few years and the end is not in sight. Progressive orchardists are everywhere concerned about the possibility of an apple over-production, or the influence that these newly-planted trees will have upon the markets when they come into bearing. Dr. Funk and Mr. Tyson have discussed this question in this issue. Other prominent fruit growers will give their views on the subject in subsequent issues.—The [illegible]

Never in the history of our country has there been so much interest manifest as to the future outcome of the apple industry. The query comes from every side, "Will there be an over-production when all the trees planted come into bearing?"

Let us take a survey of the ground. Fifteen years ago the United States had 200,000,000 bearing trees [illegible]. Since the rapid spread of the San Jose scale and other insects and fungus diseases, this number has been reduced to about 150,000,000, and continues on the decrease, notwithstanding the large orchards being planted in different states. Why is this? Because for every tree planted by the specialist there are two or more trees that die for the farmer.

I have been traveling over the State of Pennsylvania for the last 12 winters as an institute lecturer on horticulture. In every county the same sad sight meets us, the rapid decay of the orchards. Large and otherwise prosperous farms that a few years back had profitable orchards now have but the remnants remaining. Many farmers have no fruit at all, buying what they want from the specialist. When we take into consideration that not one tree out of every [illegible] planted ever reaches profitable maturity, we can see that the increase will not be alarming.

Twenty years ago Missouri and Kansas had their great apple orchard boom, single orchards of 1,000 to 1,5[illegible] acres being planted. Where are they today? One of the largest, comprising [illegible],000 acres, has been cut away before it was 20 years old and planted to other crops, the fruit proving unprofitable, and others are going the same way. Why is this? Because all localities are not adapted to apple growing, and not one man out of every 20 will ever make a financial success at the business. Unsuitable land, selection of varieties not adapted to the locality, lack of fertilization, proper cultural methods, spraying, etc., are all important factors in the reduction of orchards.

Now how about the products of these trees; are they producing more fruit? Let us examine statistics. In the year 1896 the United States produced [illegible] barrels of apples. Since then there has been a constant gradual decrease, until the last five years [illegible] as follows: 1907 gave 29,540,000 barrels, [illegible] gave 24,225,000 barrels, and 1911 gave 3[illegible] barrels. Think of it. Less than one bushel per capita. Then when we consider that less than [illegible] of these are marketable taking the export trade off, several million barrels ground to cider, and other millions decaying, it leaves but little more than one peck for each person in the country. Does it not look more like a famine than an over-production?

Now how is it about prices? In the year 1891 apples ranged in New York markets from $1.25 to $1.75 per barrel. In 1900 they sold from $1.75 to $3.00 per barrel, and for the last few years they ranged from $3.00 to $6.50 per barrel. No, it is not a question of over-production, but of poor distribution. In my traveling over the state this winter I found it impossible to get good apples to eat. The merchants told me they could not get them. Prices are also out of reason, and in the city of Reading apples are selling today at 15 to 25 cents per quarter peck, and by the bushel at $2.00 to $2.50.

Such prices are beyond the reach of the average would-be consumer. We are a fruit eating people. Put good fruit at reasonable prices and the consumption of fruit would be tripled, and instead of hearing the cry of over-production, there would be a demand far beyond what can be produced in the near future.

THE WORTHLESS FARM ORCHARD WHICH IS RAPIDLY BEING REPLACED BY NEW PLANTINGS.

APPLE OVER-PRODUCTION

By CHESTER J. TYSON, Adams Co., Pa.

Is the planting of apple trees being overdone? Just now some persons are giving very positive answers to this question, some of them exactly contradictory. I will say very frankly that I do not know. I do have an opinion, and am willing to back it by action; but I do not want a single man to accept it for other than what it is—my opinion.

Here is the situation as it exists: For nearly ten years past there have been a perfect craze of orchard planting, and apple trees by the millions have been set out. Obviously, many of these will never enter into competition, but it is probably true that the end of the next five years may see double as many bearing trees in the United States as there were five years ago. It is also probably to be expected that sometime in the next five years the middle west—Ben Davis belt—will set a large crop coincident with a full crop in the Winesap-York Imperial-Baldwin-Spy-Greening belt, in which we are most interested. That will probably mean lower average prices for apples than we have seen for many years.

Here are a few well-known facts pertinent to the question: First, the cost of producing apples on the Pacific slope, plus freight to the eastern markets, represent a liberal price for eastern fruit. Second, well-grown and honestly-packed eastern apples will bring nearly as much per bushel today as the western fruit, and in immensely larger quantities. Third, the Ben Davis apples of the middle west never bring quite as much per barrel as the varieties grown mostly in the east, and this difference increases as the crop of Bens increases. Fourth, as the retail price of apples decreases, the consumption of fruit increases at a rapid rate. Growers, consumers and wholesale dealers are combining to reduce the cost of distribution, freight, retail profits, etc., and they will get results. Fifth, apples of the highest character, as to quality, growing, grading and packing always sell higher, often a dollar per barrel more than the average lots.

Based on these facts, it is my opinion that the far west can never put the eastern grower out of business, and that the competition of the Ben Davis section is not our most serious concern. It is my belief that when those years of great crops do come, as they surely will, reduced cost of distribution and lower prices will help out by tremendously increasing consumption.

Summing up, it is my opinion that if the cost of growing has been guarded, and the marketing is wisely done, it will never be necessary to sell strictly well-grown, honestly-packed eastern apples at a loss, especially after the grower's brand has become known. I am just as thoroly convinced that 9[illegible] percent of our growers will never take sufficient pains to produce fruit of the highest character, and that their rewards will be in proportion to their efforts. Backing this opinion by action, we have just planted an additional 30 acres of orchard.

SOLVING THE LABOR PROBLEM

There are a great many farm-owning practical farmers who, for various reasons, have to conduct their farming entirely with hired labor. How to do this at a profit with such class of help as our labor markets afford is a very live topic with them; and, in a lesser degree, with all farmers. This has led to the trying of a good many different ways and means with varying degrees of success and of failure. A Rensselaer County (N. Y.) farmer-business man has devised and is following a plan that is different from

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all others I know of. During its three years of existence it has proved fairly satisfactory to all concerned. The farm contains, all told, 80 acres, 60 of which are tillable, the balance being taken up by the buildings and yard, a 12-acre swampy wood-lot and a rough pasture lot, containing about 100 sugar maples. The owner, who is a practical farmer by birth and training, tho a city business man at present, outlined the plan to me as follows:

"The plan has worked fairly satisfactorily so far, the farm giving a profit each year; but I don't consider it perfect, by any means, or that it is a complete solution of our hired-help problem. I have had four men, including the foreman and the salesman, regularly from April 1st to December 1st, and during the busy season a number more of extra hands. All now are Italians, most of whom have been good workers, altho they have, except the foreman and the salesman, been 'green' as to farm work. The foreman and the salesman are really excellent farmers, and have been with me from the start of the plan.

"Four years ago thru the breaking down of my brother-in-law's health, I found the management of a feed and grain business (in which I was silent partner) in the city on my hands. It made such demands on my time that I had to be away from the farm the greater part of every day—except Sunday. I tried to run the farm with hired hands under a working foreman—a son of a former neighbor—to keep things going when I was away, giving him the orders for the day's work each evening after getting back from town. One year of this was enough. I ended the season—the last four months—with a bunch of Italian help that I picked up in the city as a last resort. Two of these Italians proved exceptionally bright and willing workers, and are now my foreman and salesman respectively. In December my partner-brother-in-law died, leaving on me the settlement of his estate in addition to the management of our feed business, thus taking even more of my time. I didn't want to give up the farm, and I couldn't give up the business in town, so I set myself to find some way to manage both. I finally hit upon the idea back of this plan—and decided to try it for a year—and I've followed it ever since and am still managing the business in the city, too. While this city business now takes most of my time, so that I cannot actually do any work on the farm, I give it my personal attention by planning the work in a general way, but I have to leave the carrying out of my intentions—not instructions—to the foreman and the salesman. One of these men I made foreman, in charge of all farm work, and the other salesman, to look after selling to the 'hucksters' as well as help with the farm work. As the success of this way of farming would rest largely with these two men, I decided to give each a share in the net profits. Both men were pleased with the proposal I made them, so we agreed to this arrangement, effective from March 1st:

"They were to receive their regular monthly wages, the same as heretofore, and in addition to this one-fourth of the net profits was to be divided between them. All the expenses of the farm were to be paid out of the gross receipts. If a horse or a cow died another was to be purchased in its place. If the tools were broken or lost, new ones were to be bought and paid for out of the gross receipts: and this, of course, would reduce their share of the profits as well as mine. The foreman has had to hire the extra hands, work them and pay off; the salesman has had to attend to the sale of all the vegetables and fruit and make a statement of each day's sales, and turn in bills or vouchers for all money paid out, so his cash would balance.

"A record was kept each year of receipts and expenses. The first year the result was a total receipts from farm produce sold, $2,487.70; total expenses for the year, $1,562.40; net profit for the year, $952.30. Of this, $125.30 was left in the bank as working capital for the next year. Now last year shows up a little better even, with a total receipts of $2,765.55; total expenses, $1,691.33; and a net profit of $1,074.20. A division of the profits has been made every three months from the start, as I thought this would encourage them to greater efforts, and it has done so. This year each of the two men received $140 in addition to their regular wages. At present the foreman and the salesman are each receiving $35 per month, year round, and each furnished with a small (5 rooms and cellar) cottage, with an acre of ground for their chickens and garden and two quarts of milk daily. Besides at harvest time a couple of barrels of apples are put in their cellar, but this is a gratuity not called for in our agreement. I have always made it a point to treat them fairly and pay promptly. Also I have found it necessary to advance their wages a little each year, as the demand for experienced farm labor becomes more acute and the general scale of wages becomes higher. The other help, engaged by the foreman, are hired by the week or month. This year they were paid $1.75 per day, paid off every week end. They board themselves, most of them coming out from the city daily on bicycles. In the hight of the season, when the supply of perishable vegetables, such as summer squash, cucumbers, tomatoes and the like, is greater than the demand for them by the hucksters, these hands are given the surplus to take home: but this is a gratuity not a part of their wages or a matter referred to in hiring them. Under these conditions, the men have seemed satisfied and have done good work, even tho 'green' at the opening of the season. In fact, I doubt if American-born help would have done any better—certainly not that of the kind I would have had to employ.

"Yes, there have been some hitches and troubles. I don't claim to have solved the farm labor problem by any means, but I am inclined to think that I have gotten more work done for the number of hands employed than anyone else in my locality, and that the money I have paid out in profit sharing has been a good investment, so far. Under the circumstances, I think I am on the right track in overcoming the farm-labor problem, and am thinking of extending the profit-sharing to all the help who are with me three months, tho in a less degree. I don't expect such a plan will add considerably to my net profit, but if it will make the men more regular and induce them to take more interest in their work it will be worth while."—Clark Westford, Schenectady Co., N. Y.

A FIELD OF SOY BEANS DRILLED IN ROWS.

A SUCCESSFUL TWO YEARS' ROTATION

On certain fields I have adopted a two-year rotation which is producing most satisfactory results. Four crops are grown on each field in two years. Two of these are cash crops and two are renovating crops. The soil is kept busy and no weeds are allowed to grow. The cash crops are corn and either soy beans or tomatoes for canning. The renovating crops are crimson clover, soy beans (which is also a cash crop), and winter rye mixed with winter vetch. No nitrogen what ever is bought. Acid phosphate and some form of potash are applied in moderate quantity to the cash crops every year, the expense not exceeding $2.50 per acre.

Lime is applied once in four years to each field. I use a hydrated lime, which comes in 40-pound paper sacks, and costs $7.50 per ton at my railroad station. I apply it with a machine spreader which, with a good team and driver, will cover 20 acres or more per day. It is done so perfectly and evenly that every foot of ground gets a due proportion. The lime is applied after plowing and rolling the corn ground, but before harrowing and planting the corn, and at the rate of 500 lbs. per acre. Harrowing and subsequent cultivation mix it thoroly with the soil.

This form of lime costs more per ton than the lump lime, but is cheaper in the end on account of labor saved and greater thoroness of spreading. This rotation requires two fields only, and the details of management are as follows:

Field No. 1.—Winter rye and vetches plowed under April 12th, limed and thoroly fitted. With fertilizer drill apply 400 lbs per acre of "half and half" (1,000 lbs. 16 percent acid phosphate and 1,000 lbs. kainit), and plant to corn. Give frequent but shallow cultivation until early in July. Then sow 15 lbs. inoculated crimson clover seeds per acre, and follow with last shallow cultivation at once. The crimson clover is often four to six inches high before freezing weather in the fall, and keeps perfectly green all winter, growing in all open weather, and is in full bloom by May 10th, ready to be plowed down or cut for hay.

Field No. 2 was in tomatoes for canning in 1912, in which crimson clover was sown in July. This clover and the old tomato vines will be plowed down about May 10th, and a dressing of acid phosphate and muriate of potash (1,600 lbs. acid phosphate and 400 lbs muriate of potash) will be broadcasted before harrowing, at the rate of 250 lbs. per acre. Then soy beans will be drilled in rows 32 inches apart, using 30 lbs. of seeds per acre.

Soy beans should be inoculated for best results. I have tried inoculation of the soil by using soil taken from fields already inoculated, but very much prefer the prepared cultures applied directly to the seeds before sowing. The prepared cultures can be bought of any reliable seedsman. The soy beans are planted in rows as above, and kept well cultivated, to secure a large yield of seeds, and also to furnish a fine seed bed for the crimson clover crop, which is sown just before the last cultivation of the beans in early July.

The Wilson variety I have found best suited to my purpose, after trying many other varieties. The Wilsons mature in 90 or 100 days, and make a large crop of both seeds and hay. If the bean crop is desired for hay only, I would drill them in with a grain drill, using all the tubes, and sowing six pecks of seeds per acre. In this case, I would defer sowing the crimson clover until immediately after the soy bean hay is removed.

Tomatoes for canning may be substituted for the soy beans, if desired, and work equally well in this rotation. Crimson clover nearly always succeeds well when sown with tomatoes. If I am needing hay, I often cut the crimson clover crop quite early and plow under the stubble. There is positively no better hay than this clover makes when properly cured. It is greatly relished by all domestic animals.

The soy bean seeds make excellent feeding meal, somewhat similar to linseed meal, and rich in protein. Soy bean meal is worth as much per ton, in feeding value, as linseed meal. In sections where crimson clover does not succeed, use the winter rye and vetch mixture instead.

As I do not keep many cows, I feed only clover hay and soy bean hay, and sell all my corn fodder in the field as soon as husked, to parties who come from the city near-by, and do their own hauling. The fodder sells for more than enough to pay for all the lime and fertilizer used. My soil is full of humus all the time, and is constantly improving.—E. G. Packard, Kent Co., Del.

OBSERVATIONS FROM NEW YORK

Making a quick trip across the southern tier of New York State a few days ago, I could not help seeing a good many things that made my heart glad. It surely does seem as if the general condition of the farmer folks is growing better and better with every passing year. The houses and barns look better, more commodious and more comfortable. It was a rather raw and cheerless day when I started away from home, and the thing that impressed me most was the few cattle I saw standing out in the wind. You know how often we let our stock go out in the cold, even in the storm many times, to stand humped up on the windward side of a rail or wire fence. But I saw only one such herd that whole day. All were comfortably housed. That means more money saved in feed and more money taken in for milk and butter.

One other thing I noticed, and that was that things look better round the farm homes than they used to. That is, the stuff was picked up about the buildings, and there were fewer old sleds, wagons and such things standing out round. I tell you, that is worth while, fellow farmers. We preach sermons every day we live, just by the care we give to these little details of our farm work. A man traveling thru the country the way I was, sees his brethren of the profession interested in the appearance of their premises, and he goes home feeling that he must not be behind others, and at once begins to clear up about his own house and barns. The value of this from a money standpoint is hard to estimate. If a stranger who is looking for a farm sees everything looking trim and prosperous in a certain section, he will at once say to himself, "That looks pretty good to me. Believe I would like to live there!"

And this jogs my memory and calls to my mind a couple of letters I have received within the past few days from men who want to change their condition and get farms in another part of the country from that in which they live. Both these men happen to be in the West now, and they want to come back East. It is a singular thing that with us in this part of the country there is more call for farms by men who are away West than I ever knew before. Few are going West, many are coming East. There is something quite interesting about this to me. What does it mean? For one thing, I think it means that land is very high in most parts of the West, so that those who have only a reasonable amount to invest in a farm feel that they can do better in the East. It means, too, as I look at it, that some have done well at farming in the West, have sold their farms, or want to sell them, and are looking for eastern lands in which to invest. Still again, it means that many think they would like to get back among the old friends in the east.

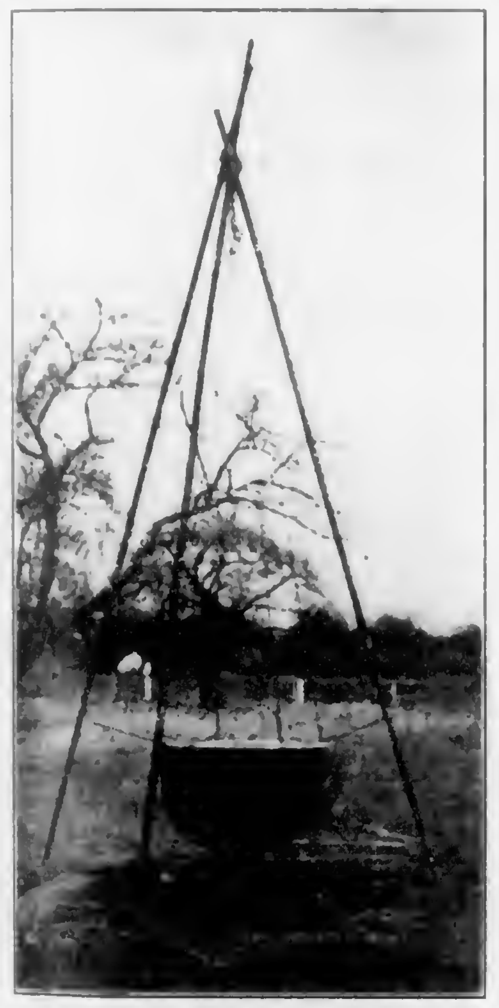
The men who have written me, however, do not seem to understand present-day conditions in the East, and I feel slow about advising them to make the change, lest I should make a mistake and hold out inducements that facts would not warrant. The truth of it is, we move around too much. This is one of the failings of the farmers of our country. It takes a long pull to win out. Many men do not get fairly down to business in one place before they feel called upon to move. There are advantages and disadvantages in every part of the country. That has often been said, and yet men do not seem to pay much attention to it. I have made up my mind that I will not say to any man, "Yes, come on! You will make no mistake!" But I will say, "If you are comfortably situated where you are, if the home conditions are what you find to the best advantage of the young folks, if you are doing well from a financial standpoint, be careful what you do. It is a serious thing to tear up and go away across the country, unless you are pretty sure you are going to better your circumstances."

There is one other side of this. Most of the men who write have been in correspondence with real estate agents, and you know how fine many of these men make things look on paper. That is why so many are disappointed after they have made a big change. The best way, it would seem to me, would be for the farmer to go and see the place he proposes to buy before he decides to make the change. That would save many a heartache. It might prevent more than one farm tragedy. I like to think well of my own part of the country. It does me good to speak well of it; and yet we do not all see things alike. The place I like, my friends might not be favorably impressed with at all. So it is best to be very careful how we make changes ourselves or advise other folks to do it.

The last thing I am going to speak about now is the great change that is taking place in the men who are coming to the farms of our country. So many of them are of foreign birth! These men bid fair to make good farmers. They have the characteristics which tend to give us good citizens; but think what an opportunity is placed before us in shaping the thought and action of these people! The farm papers of the country are especially charged with a mighty duty in this respect. It is a great privilege to be able to mold the lives of a great body of men and women such as is coming to this country at the present time. I do not mean entirely now the bent for good farming, but the building of good character and true citizenship. Would that every editor in the land might appreciate this! E. L. Vincent, Broome Co., N. Y.

WEEKLY TOPICS FROM THE FARM.

It is wonderful how the recent warm rains have started the sap and have given the wheat the appearance of true spring. Snow drops have been up for some days, the lilac buds are pushing out into bud and the maples are showing unmistakable signs of spring. In fact, so evident are the signs of vegetable life that we had to rush to our spraying and finish that up before there was any danger of bud injury. We have been somewhat censured for letting our spraying go to this late date, some of our neighbors saying that it was foolish to take a chance of injury to the bud. Had we been spraying only apple trees, it certainly would have been better to spray earlier, but we also have sprayed a good many peaches, and where this spray is delayed until early spring there is much less danger from leaf curl. Thus we combine two sprays in one, and not only control the scale but also the leaf curl, which, in some seasons becomes serious. We boiled our lime and sulfur according to the 1-2-1 formula in the 75-gallon kettle shown on this page and obtained a good, strong mixture, showing a hydrometer test of 1.25. Spraying was done with an ordinary hand barrel pump under a pressure of about 110 lbs., and was just as thoro as tho we had used a power outfit. For large trees, however, we have found the power outfit to be the most efficient.



A HOME MADE LIME AND SULFUR BOILER THAT GIVES GOOD SATISFACTION.

It is gratifying to note how many farmers are beginning to spray their orchards. If they had only begun this years ago conditions would be different now; but it is better late than never, and will bring back into bearing many of the present old and worthless farm orchards.

This is the time of year when we can say, "I told you so" to the fellow who has a barnyard full of manure that must be hauled out. How much fertility is wasted every year, to say nothing of time, by this obsolete practice of allowing manure to accumulate in the yard. Manure loses about one-half of its value when exposed to the elements, and it is far easier to haul it out on the fields as it is made during the winter when time is cheap than to delay things in the spring.

The incubator is running full blast now, and it would have been better had we been able to start it three weeks ago, so that one hatch would already be on hand. The early chicks are the early layers, and it certainly pays to have eggs in June or July rather than carry those chickens over the winter until next spring. It pays to have a good flock, providing enough care and attention is given to make it pay, and the quickest way to increase the flock is by the incubator; but give the chicks every chance in the world to make good after they come.—A. Farmer.

WHAT DOES IT COST?

Our government authorities are collecting data relative to the cost of raising horses. They find that up to three years of age the cost, including labor, amounts to $106 to $140, according to locality. This is certainly a worthy field of investigation, but interesting as the findings may be, the practical farmer does not wait for others to figure out such costs for him. He gets right down to such a basis as it exists on his own farm. He does not stop with horses, but includes cattle, hogs, sheep, crops and the various possibilities of his farm.

Those who conduct such an investigation nearly always meet some surprises, find that profits, and maybe losses, are not always where suspected. To the inexperienced, such an effort seems all but practical. They think it tedious to wait and keep accounts three or four years to find out what it costs to raise a horse, etc.; besides they may not know anything about bookkeeping. The man who is unable to keep some run of his business need not expect satisfactory results, for he will be disappointed. But it is not necessary to wait four years to find out what it costs to raise a horse or a crop. A winter evening is all that is needed. With pencil and paper and mind count the cost. You may not arrive at the exact cost of a single animal, but if you are a man of experience you will strike a more accurate average than the man who counts cost on a single individual. As a farmer of experience you can compute the cost of raising a horse, and when done it will be easier to find the cost of hogs, cattle, sheep, etc.

When the cost is counted, it may be found that one has been working according to some whim of his own, and not according to his best financial interest. We are almost sure to learn to extend our investment and effort along some of the more favorable lines, and to curtail or discontinue others. Not alone with live stock but with crops, too, the cost schedule may be figured. Rotation may make it necessary to include crops not comparatively profitable, but it will pay abundantly to know the costs and profits of all, for therein lies a fundamental source of information. Variable market and climatic conditions complicate matters to some extent, but once figured out, due allowance may be made for these.

Years ago we counted the cost as applied to our own farm, and since then profits have increased. Let us remember that however helpful the advice and experience of others may be to us, we must faithfully apply home conditions before we can cover our own case. Read, study, listen; develop your own ideas, but follow no one.—H. E. Tweed, Brown Co., Ohio.

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Horticulture

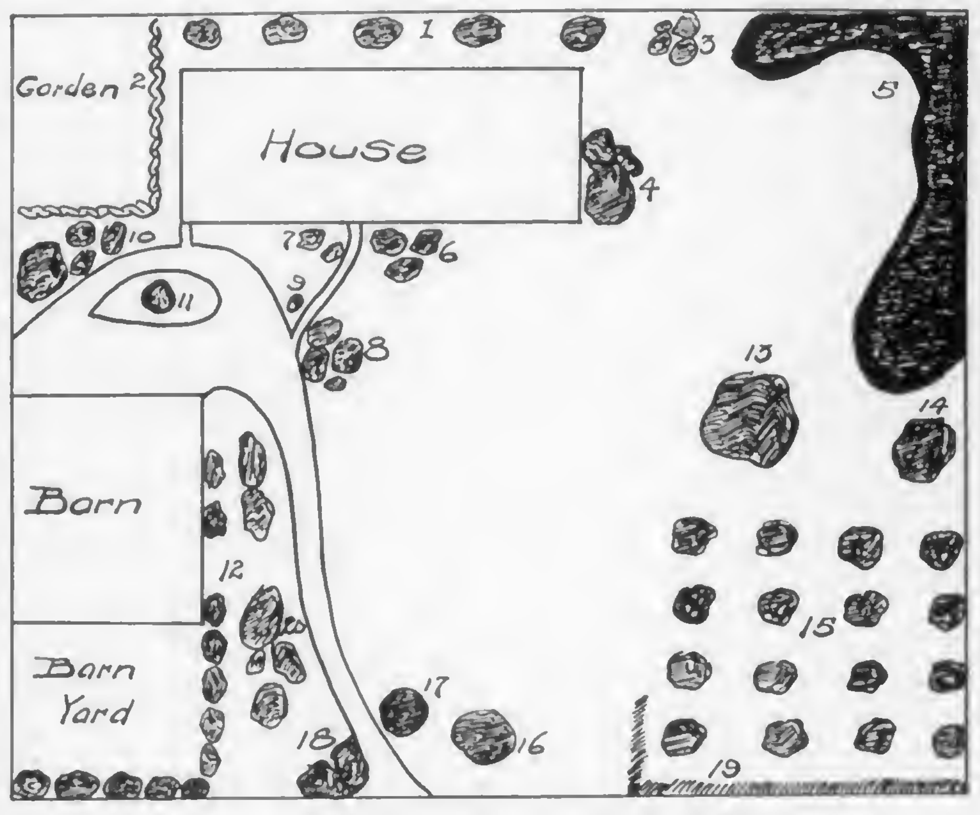
FORWARDING THE TENDER GARDEN VEGETABLES

Squashes, melons, lima beans, tomatoes, etc.—the tender vegetables—can not be safely planted in the open ground, in the climate of southeastern New York until the trees are in full leaf, which is not generally until about the last week in May. With but little extra work, a part of the garden supply of these vegetables can be had two or three weeks earlier than without artificial protection, and are very acceptable at a time when we "get hungry for green things." The right time to sow the seed of these vegetables which we wish to forward, is about one month before it is time to transplant in open ground. For those who have no greenhouses, but must use the inexpensive hot bed or cold frame, I wish to tell about some methods I have practiced in utilizing the cold frame or spent hot bed.

The tender vegetables, except the tomato, are not safely transplanted unless a portion of soil is kept around the roots undisturbed in transplanting. I would expect better results, and consider it less labor to construct a hot bed or cold frame than to care for seeds or plants in pots or boxes in the house. About the first of May use a hot bed from which has been removed such early hardy vegetable plants as lettuce, cabbage, etc. No fresh manure is needed, and at this time of the year a cold frame is almost as good. Dig up sods of earth and cut them in squares of about four inches; invert and fit them nicely over the bed. In these plant sweet corn, lima beans, melons, cucumbers, tomatoes, peppers, etc. Water freely and keep the sash raised, except on cold nights, to admit plenty of air. A short stocky plant is most desirable, one that is so hardened by exposure that transplanting in open ground does not check its growth. Too rapid forcing gives you a tender spindling plant. These sods, with the plants in them, can be lifted out with a spade and transplanted in the garden, so the plant is not disturbed. In place of the sod, old berry baskets, paper boxes, or pots can be used, but sods dug from a pasture or meadow are preferable. The earliest and finest squashes I have ever grown were from plants left in the old hot bed. Nothing is gained by sowing seed too early. A small, stocky plant, hardened by considerable exposure, that is ready for transplanting when the ground has become thoroly warm, will mature a crop as early as the larger and lest tender plant.

Some of the hardy vegetables, as asparagus, rhubarb, spinach, lettuce, etc., can be so easily forwarded out of doors, and their quality be improved by so doing, that for a succession of them it is desirable, even for those who have a greenhouse or hot bed. Saw a board, that is one inch thick and twelve or more inches wide, into squares. One of these squares, sawed from corner to corner, make the sides, and one of the squares the back. Fasten plant bed cloth, or cheesecloth, oiled, or a pane of glass on the front and the protector is complete. For tender vegetables that must be kept warmer and have more sunshine, glass is best. For covering long rows or plants, larger protectors, about five or six feet long, are better. As soon as the ground can be worked sow lettuce and spinach in rows 18 inches apart, and place protectors made as described over the rows. The growth is forwarded considerably and the plants are much more tender and edible. Little watering or attention is needed after the seed is sown, if cloth is used on the protectors. Protectors made in the same way, but of larger size, can be placed over the rhubarb and asparagus. I would advise that they be covered with glass for this purpose, and that fresh horse manure be banked around them. The improved quality of the vegetables will pay for the work.

When transplanting celery for early use, place the long protectors covered with cloth over the row for a week or two to shade the plants and to retain moisture. The small protectors are better for covering single plants growing in hills. If these protectors are at hand, cabbages and cauliflowers can be planted, or plants set in open ground as soon as the frost is out in spring. Covering in this way makes the conditions the same as with the cold frame. Tomatoes and other tender plants can be transplanted several days earlier out of doors, and it is a great satisfaction to feel that they are safe, even with a late frost. This article is written especially for those who have little time or equipment for early gardening, and who wish to enjoy fresh vegetables several days earlier than possible without artificial protection. Besides this gain, by the method I have described, I think the improved quality of vegetables grown, and the protection afforded from insect parasites when they are so covered, will amply repay anyone for the little extra work in forwarding vegetables.—W. H. Jenkins, Delaware Co., N. Y.



PLAN FOR FARM YARD IMPROVEMENT.

BEAUTIFYING THE HOME GROUNDS

The plan here illustrated presents a difficult problem of home gardening and its solution. It is just such a problem as confronts the farmer who has acquired a farm where the previous owner has paid no regard to appearances in the placing of buildings or where a public highway ran thru after the buildings are placed has reversed the owner's plan.

To screen the outbuildings and give prominence to the dwelling, silver maple trees are planted on the road and drive side of the barnyard. The space before the maples and barn on the side of the drive is occupied by the following shrubs: Nearest the highway, old-fashioned snowball, in a broad mass, with the maples as a background. Next to this is a mass of Viburnum prunifolium, with several tall specimens of California privet in the background. Near the turn of the drive Rhodendron maximum is used. These plantings are made to extend outward in a broken line, thus lessening the apparent distance to the grounds beyond.

Bordering the drive on the field side are two specimen trees, Catalpa and Ginko. Along the right boundary of the grounds are planted Bladder Bush, Purple Lilac and Mock Orange, with Althea Rose just beyond the Mock Orange. Next to this shrubbery planting, which is planted in gently undulating bays, are Lombardy poplars in back of the dwelling and planted serving as a windbreak.

Japanese Barberry is used as a border to the garden, and Rhododendron is about the garden boundary near the drive. A large walnut occupies the space in the center of the drive. The laurel, rhododendron and barberry require practically no pruning. The Forsythia may be pruned after it blooms in the spring.—M. Robert Conover, Monmouth Co., N. J.

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6	Althea rose	.48
7	Spiraea Van Houtii	.32
8	Bladder bush (colutea arborescens, Syringia vulgaris and Philadelphus coronarius	.64
9	Yucca speciosa	.15
10	Rhododendron	3.00
11	Black walnut	.40
12	Silver maples (Acer dasycarpum)	4.00
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14	Hickory	.39
15	Apple and peach orchard	3.20
16	Catalpa speciosa	.30
17	Ginko (Salisburia)	.40
18	Forsythia fortunei	.48
19	Rosea rugosa	3.50
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CULTURE OF THE CABBAGE FAMILY

I think most people succeed better if they grow plants of the cabbage family out of doors in a seed bed for the main crop. In the spring, as soon as the ground is ready to work, select a piece of mellow soil, only fairly rich, where cabbages have not been grown for several years. Spade it and rake it down down finely, then mark it off in little furrows an inch deep and 12 inches apart, and sow the seed rather thinly. If the soil is dry tread them in and cover by drawing the back of the rake over the furrows. Cultivate the bed occasionally until the plants are three or four inches high, or until the last of May or the first of June, when they should be ready for transplanting.

When we have made the conditions right for growing one of the cabbage family we can grow them all, as their needs are so much alike. The farmer can very easily grow good cabbages. He should top-dress heavily a piece of sod ground(preferably clover) when he is planning the corn ground. The soil can be prepared by plowing in early spring, harrowing several times, until time for corn planting, then set the cabbages and cultivate with horse and cultivator.

The old family garden is not a good place for growing cabbages, because the soil may be infested with the germs from which develop club-foot.

One method which has given good results, and which requires less work, is as follows: When the ground has been prepared as above described, furrow about six inches deep with a 12 tooth [illegible] horse cultivator with furrower attached to the rear. The cultivator makes a very fine seed bed in the bottom of the furrow. In this furrow run a garden seed drill, which either sows in a continuous drill or drops in hills. The plants need to be thinned and cultivated soon after they appear, and as they grow draw the soil around the stem so there is no long stem above the ground. With this plan thoro work need be done when the plants first begin to grow, and mellow soil is needed.

At any time during the growing season cabbages can be fed with commercial fertilizers, so if their growth indicates lack of plant food, unless the soil is infested with disease germs, the crop need not be a failure, for you will be sure of a crop if the plants are kept constantly growing by feeding and cultivation.

If it is necessary to plant in an old garden instead of on fresh soil, apply lime to a part of it after taking off an early crop, as peas or lettuce, seed in July to clover (in this locality) and so prepare the soil for cabbage next year, putting the plants down to the first leaf, and pressing the soil firmly around it with the feet.

Cabbages can hardly be cultivated too often, and but little hand hoeing need be done. The work can be rapidly and well done with the fine-tooth horse cultivator and garden wheel hoe. Cauliflowers especially should be kept growing. Set them on the best part of the ground, where the soil is deepest and richest. If the season is dry, place a mulch of manure between the rows in July to prevent a check in their growth. This is a good thing to do for all the cabbage family, and generally insures a good crop. Kale or German greens, a non-heading cabbage, is very easily grown, and is appreciated most by those who like boiled dinners. Brussels sprouts are less commonly grown in farmers' gardens than cabbage, but their culture is the same, only do not give them over-rich soil, or they may run mostly to stems.

The best cabbage that I know of for family use is one of the Savoy cabbages. This has more loose leaves than those of the other strains, but it will make a head of fair size and even the outside leaves will be tender. The quality is the best. The dark green curled or wrinkled leaves are very ornamental. I would add only one other cabbage to my list for home use, the Early Winningstadt for both early and late. The high-priced strains of cauliflower seed are very much alike, but from the low-priced seed the heads may not be so white, or so early or uniform in size. The standard varieties of kale and Brussels sprouts are all good. Broccoli is hardier and more easily grown in some localities, but it is so similar to cauliflower that few care to bother with it.—W. H. Jenkins, Delaware Co., N. Y.

BLACK-ROT AND STEM-ROT OF THE SWEET POTATO

While there are a number of sweet potato diseases, the most important are stem-rot or yellow-rot, and black-rot or black shank, both of which affect the stem and roots of the plants. Stem-rot is characterized by a blackening of the stem of the plant. The organism enters the potato at the stem and is visible there by the blackened ring just beneath the skin. Black-rot affects the plant from a little above the soil line down into the ground, causing a black rotted appearence of the affected part of the stem. On the potato it appears as a black circular spot, which grealy enlarges in storage.

Experiments and observations, according to L. L. Harter, pathologist of the Department of Agriculture, in Circular 114 of the Bureau of Plant Industry, about to be issued, have shown that both field and hot bed are very common sources of infection. To control these diseases three things are therefore imperative: (1) Clean seed; (2) the hot bed and surroundings must be free of the organisms; and (3) the plants must be set on soil where these parasites are not present. If it is possible to meet these requirements the crop should be free from disease.

Saves Seed Increases Yield Improves Grade

Monitor Double Disc Drill

"The Drill That Pays for Itself"

Drops in front of bearing

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All come up at the Same Time. The proper placing of seed and uniform covering with moist soil causes the grain to come up and ripen evenly—increases the yield and improves the grade.

The Monitor Cannot be Clogged in any soil, mud, gumbo, weedy or cornstalk ground. This added to the fact that Monitor drills need not be set so deeply insures one-third lighter draft.

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164 HARVESTER BUILDING CHICAGO U S A

The Dairy

GROWING THE BEST ENSILAGE CORN

Corn and Soy Bean Silage

The ideal corn to ensilo is the largest variety that will mature ears in your locality. When the corn is cut the ears should be partly glazed, or at the stage of growth when they begin to droop. The greatest combined value of ears and stalk is when the corn has so far developed. Some farmers who produce ensilage of such high quality that it saves a considerable part of the grain bill say that the ears should make two-thirds the weight of the crop. Before the ears are nearly matured the stalk is too soft and sappy to ensilo well.

To grow such ensilage the first consideration is the seed. In the central and southern parts of New York, with 600 feet elevation above sea level, probably the dent corns are best, and the old standards, as Pride of the North and Leaming, are as good as any. Above 600 feet, especially in the more northern parts of the state, or the same latitude elsewhere, it is safer to plant the flint corn, as Hall's Golden Nugget, or Wisconsin No. 7. Do not go so far from home for seed that you do not get acclimated corn, as for instance, you can go to the southern part of your own state, or any locality with similar climate, but with a little lower elevation, and get the largest ear that ripens there.

After securing the best seed corn, it should be planted right to obtain the largest yield of good food, and the distance apart has much to do with the yield of ears and stalk. This will depend, of course, on whether the corn is planted alone or with soy beans. Writing from my experience, I would always grow soy beans with ensilage for corn, for the reason that it has been proven that soy bean roots grown in association with corn roots cause the corn to take more nitrogen from the soil, and so increase the protein content of the corn, and therefore its feeding value. The soy bean being rich in protein, so nearly balances the corn silage that a large part of the usual grain bill is saved.

The writer would mix corn and soy beans, two-thirds of the former and one-third of the latter, of varieties that mature at about the same time, as Pride of the North corn and Medium Green soy beans. About 15 quarts to the acre is about right, planted in drills 3½ feet apart, then thin the corn to one or two plants in a place, three or four feet apart, and have the spaces between filled with soy beans one foot apart. The varieties of soy beans should be planted that grow in bush form, and not a vine that is supported by the corn stalks.

Some experiments described by one of the professors at Cornell University as to the yield of shelled corn and stover from different methods of planting, and amounts of seed, showed that when growing ensilage corn alone for the silo, the best quality and yield was from 12 quarts per acre, drilled in rows 3½ feet apart.

The writer grows corn to prepare the soil for alfalfa, and in his rotation of crops, it is his one opportunity to clean the soil of such weeds as plaintain, dandelion, etc., so he plans for room to give the corn clean cultivation until nearly mature. From 3½ to 4 feet apart for the rows is none too much, when the cultivator is kept going thru them until the corn is nearly grown. Some hand hoeing is usually necessary to prevent all weed growth, and when doing this the corn is thinned in the rows to give each stalk room to develop well.

There are some good reasons for giving the corn very frequent and thoro cultivation, so during dry weather an earth mulch is all the time kept on the surface. Aeration of the soil by letting the air and sunshine thru it is the best way to cleanse sour and so-called "rusty" soils of ferments, and make them more productive. Cultivation pulverizes the manure in the soil so it is sooner available, but perhaps its most important function is to make use of the force of capillary attraction, by keeping a finely pulverized layer of soil on the surface, by use of a cultivator with fine teeth set close together. This gives one such control over moisture conditions that sub-irrigation is practicable, and sufficient water from underground reservoirs be caused to rise to the roots of the corn to keep the corn growing well during the most severe drouth.

In conclusion, I wish to tell my experience in growing corn on an alfalfa sod. A field that had grown good crops of alfalfa for several years was given a very light dressing of stable manure during the winter, and plowed early in the spring. The soil was found to be completely filled with alfalfa roots to its lowest depth, or perhaps three or four feet. The corn was planted on the land with no other fertilizer, except the light application of manure which was applied to make conditions favorable for bacterial action rather than to furnish plant food. The growth of corn was very rapid. The yield was very large, but the best use of the crop was cleaning the soil of weeds, making a place to apply lime, and preparing for the re-seeding of the ground to alfalfa, for the growing of alfalfa the writer knows should be the ultimate end to be worked for in all farming operations on the dairy farm.—J., Delaware Co., N. Y.

RING WORM IN CALVES

This is a skin disease that appears most frequently during the late winter and early spring. Its presence is shown by the appearance of scabby areas that vary from half the size of a penny to that of a dollar, and even larger. The hair falls out and the surface of the scabby area is covered with a fine white scurf. It shows oftenest about the calves' heads and necks, but may also appear on any part of the body.

Ring worm is caused by a small parasite that burrows in the skin. Its contagious nature is well demonstrated by the fact that the diseased animals spread it by rubbing against others that are healthy. The fact that heads and necks come in frequent and close contact while the calves are pushing and crowding about the mangers explains why the disease appears oftenest on these parts.

Treatment is simple and effective, requiring but a short time for complete cure in all ordinary cases. Tincture of iodine applied to the scabs with a suitable brush or swab several times, at intervals of several days, is all that is required. When the disease encircles the eyes, care must be taken to avoid getting the medicine into them. Dr. C. C. Lipp, Minn. University.

ADVANCED REGISTER TEST

A Change in Guernsey Club Rules

The American Guernsey Cattle Club has made a careful study of the results of the advanced register work upon the basis of one day or a two-day test. The investigation covered a considerable period of time and included observations with about 300 cows. The records obtained from this investigation were submitted to a mathematical expert for review and formulation of general rules. The expert summarized his conclusions as follows:

"I beg to report that calling the year's record of pounds of butter-fat that would be obtained from tests of every days' percentage of butter-fat, the cow's true record, the record calculated from a one-day test each month will, on the average, differ from the true record by 6½ pounds. It will not differ from the true record by more than 21 pounds more than once in a hundred cows. It will never differ from the true record by more than 32 pounds.

"The record calculated from a two-day test will, on the average, differ from the true record by 4½ pounds. It will not differ from the true record by more than 15 pounds more than once in a hundred cows. It will never differ from true record by more than 23 lbs."

The executive board of The American Guernsey Cattle Club is solicitous of having the work conducted under right conditions, yet is also anxious to provide means of making the work available to all, and regard the primal object of these Advanced Registers as being the aid that they can give to breeders in determining in the most advantageous manner an estimate of the comparative value of their individual animals. In view of the results of the study in this matter, the club has adopted the rule as given below, thus providing for those breeders who wish to have their records made upon the two-day basis, and also providing a one-day basis for those breeders unable to carry the work under the conditions heretofore imposed. It is believed that by so doing the Advanced Register will be of aid to a greater number of breeders.

Commencing April 1, 1913, the rules of the Advanced Register for Guernseys regarding the period of testing each month are as follows:

The percent of butter-fat shall be determined by the Babcock test for one full day of 24 hours, or for two or more full and consecutive days of 24 hours each, for every month during the yearly record. The owner shall, at the time application is made, designate the number of days per month he wishes the test to be made. All animals under test on any farm shall be supervised for the same number of days and the published records shall show the number of days in each month the test was supervised.

The supervisor shall be present at the last regular milking preceding the beginning of the test period and shall satisfy himself that the cow is milked dry at that time. He shall note the hour at which the milking is made, and the final milking on the test period must be made at the corresponding hour on the last day of test. After such designation the number of days may be changed only with the permission of the secretary, a 60-day notice of such request having been filed in writing with the secretary.—American Guernsey Cattle Club Bulletin.

GOOD RESULTS FROM MILKING MACHINE

Several years ago the New York Experiment Station (at Geneva) announced, after extended researches, that clean milk could be produced by the milking machine if simple precautions were observed. Now, in Bulletin No. 353, the Station reports extended tests of the efficiency of the machine as compared with hand milking, and finds that it does not measurably influence the yield of milk. That is, cows in the Station herd milked alternately by hand and by the machine in 71 full lactation periods showed no more fluctuation in yield due to the method of milking than would naturally occur from year to year in a herd milked continuously by hand. As the Station has already proved that clean milk can be produced by the machine if simple precautions are observed, the use or non-use of the machine would seem to be merely an economic question whose factors are cost of installation and upkeep, availability and cost of labor, size of herd and general convenience. The bulletin does not discuss many of these factors, but gives some carefully collected data regarding the time necessary in milking by the two methods, figures which should be useful to any dairyman carrying 15 cows or more, and in exceptional instances, to some with smaller herds. Like all Station bulletins, this one will cost you only a cent—for the post card on which you request it. Address New York Experiment Station, Geneva, N. Y.

QUALITY IN SILAGE

There have been many silos built in Tioga County during the past three years and many farmers are now using silage for feed that have yet to learn what good silage is. Many are not speaking very good words for it. We have been having four or five very poor corn seasons in this locality, with but few fields maturing, and much of the corn has not grown more than three to five feet high. This corn, in this immatured state has been cut and put in the silos. While such corn makes a succulent feed, it is far from good silage such as comes from well-matured corn. Thus, farmers that have been feeding immature stuff during the past three or four years, thinking they have been feeding silage, are quite free to say that they do not believe that silage is what it is "cracked up to be."

These farmers should not be discouraged or in a hurry to condemn the silo. Try planting corn early, being sure to get good seed and corn that will mature in your locality. Then when the corn commences to glaze, cut and put it into the silo. After feeding it a few months every farmer will agree that there is a difference between immature silage and good silage from mature corn.—Joseph E. Fischler, Tioga Co., Pa.

Stave Silos.—One of the most attractive catalogs to come to our attention this year is one issued by the Indiana Silo Company. It is a 63 page booklet, beautifully printed on good quality of paper and showing just the points in silo construction which the prospective purchaser wants to know. It also gives full description of the superior features of the Indiana silo, such as door frames and doors, stave splices and matches, hoops and lugs, kinds of timber in staves, etc.; also valuable notes on foundation building, silage crops, filling the silo, feeding silage, economy of ration, etc. It makes a valuable book for any dairy or stock feeder to have. It is sent free upon request. Address the Indiana Silo Co., 112 Union Bldg., Anderson, Ind.

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SEE THE NEAREST DE LAVAL AGENT. He will tell you how much he can allow on your old machine, whether a De Laval or some other make, toward the purchase of a new De Laval. If you don't know a De Laval agent, write to the nearest De Laval office giving make, number and size of your present machine, and full information will be sent you.

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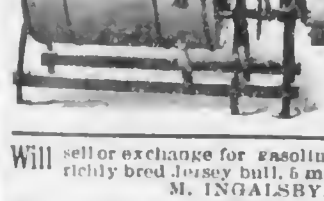

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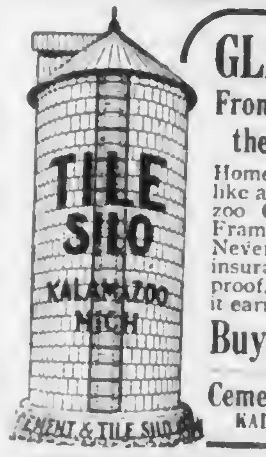

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SORE EYES IN LAMBS

Sore eyes in lambs may result from either of at least two causes. If caused by germs alone the eye will show no cause when carefully examined. Strong solutions of coal tar dip will prove beneficial, and should be dropped into the eye or used on a sponge. A one-to-ten solution is suitable. More cleanliness in the barn will tend to prevent the infection. It is a good policy to clean the barn a short time before lambing. This makes the quarters more sanitary and puts the manure where it will do good, on the spring crops.

But the eye ailment that has caused us by far the most trouble is due to the turning in of the eyelid. The hair thus irritates the ball, causing a spot that covers the entire ball if not relieved. This cause seems to be more common since the advent of more woolly faces. The abnormal condition is often quite advanced at birth, and is the cause of noticeable stupidity on the part of many otherwise lusty lambs. The most rational and simple corrective, and one that has proved universally successful in our flock is simply to rub the lid downward (repeatedly at each treatment). Sometimes it will need to be stroked downward a dozen times before it stays in position, and then this treatment may have to be repeated several times for a day or two. The sooner after birth that the condition is corrected, of course, the better.—Geo. P. Williams, Delaware Co., Ohio.

YORKSHIRE SOW WITH LITTER.

BREEDING ARMY REMOUNTS

The United States Department of Agriculture has completed for the present the purchase of stallions for the use in the encouragement of the breeding of horses for military purposes. Four Morgans, 10 Standardbreds, 11 American Saddle horses, and 9 Thoroughbreds have been purchased. These stallions, with 4 or 5 Morgans from the Morgan Horse Farm and 6 Thoroughbreds presented to the Government, will be available for public service during the season of 1913, making a total of at least 44 stallions. Local wishes will be respected, and the breed of the stallion placed in a community will be that which is most generally preferred by that community. Accordingly, the Morgans will stand in Vermont and New Hampshire, the Thoroughbreds mainly in Virginia, the Saddle horses and Standardbreds mainly in West Virginia, Kentucky and Tennessee. Furthermore, every effort is to be made to avoid competing with privately-owned stallions, and horses will not be placed in communities which are already well supplied.

The government has not spared expense in the purchase of horses. The first requisites were that they should be good, sound individuals, and registered in the proper studbooks. Good breeding was therefore essential, and in many cases stake and show-ring winners were obtained; but no horse was bought solely because he was a race winner or solely on account of his pedigree.

These horses will be available for public service on liberal terms. The owners of sound mares, with a square trotting gait, may breed such mares free of charge, provided they give the government an option on the foal during the year it is 3 years of age at $150. However, the government will not hold the breeder of a foal to his option, if he wishes to be released, but will allow him to cancel the option at any time by paying the service fee. This fee will be $25 for mature stallions, and less for those under five years of age. In buying the colts, the War Department has agreed to purchase both mares and geldings. No service fee will be charged unless the owner elects to cancel his option. If the government buys the colt, no fee is charged; if the colt is offered to the government and purchase refused, no fee is charged.

On account of the provision for free service, the government believes that the mares bred should be suitable for the purpose, and therefore it will be necessary to breed only those which are free from the following unsoundnesses: Bone spavin, ring bone, side bone, heaves, string-halt, lameness of any kind, roaring, periodic ophthalmia, and blindness, partial or complete. Mares must also be free from manifest faults of conformation, such as curby hocks; pacing mares will not be bred. Approved mares will be given a certificate of registration in the Remount Brood Mare Register of the Department.

BUY GOOD SIRE

It has been demonstrated again and again that the cheapest investment that can be made by a farmer who is trying to build up the standard of a herd of cattle lies in the purchase of a good purebred bull. It is not necessary to buy several high-priced females as a basis for the average herd, nor is it economical. The most economical results can be obtained by buying a bull with masculinity enough behind his good breeding to stamp his likeness upon the calves received.

A striking proof of this has been shown on the cattle show circuit at various state fairs this fall. One of many instances will suffice. Recently a prominent state fair judge had to choose between two cows with the same dam, but sired by different bulls, for the female championship of the breed. So strikingly familiar in type was each of them to its own sire, tho the dam was the same, that there was no trouble in distinguishing between the two. The one that had been produced by the more outstanding sire was so superior to the other that there was no trouble about the selection.

The principle illustrated is of practical value to the farmer who is thinking of beginning a herd with limited capital, or who has a very common herd that he desires to grade up. An average group of calves will be far superior to their commonly bred mothers if a good purebred bull is used. Such a bull can be purchased very reasonably if proper care is taken by the purchaser.—Ray P. Speer, Minn. College of Agri.

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Poultry

INCUBATOR AND BROODER MANAGEMENT

My experience with incubators covers several years and I have kept close watch upon different machines in that time—hot air, hot water, and no air or water. I, of course, have my choice of the three, and yet I have concluded there is not a shade of difference, if the person handling them knows his business. As a neighbor once said: "Nearly any kind of an old incubator will hatch you more chickens than you can raise. The trouble is not in hatching them, but in keeping them alive after they are hatched."

Get the chicks as quickly as dry into a cozy, just right temperature, where they can stick out their heads once in awhile—as they do under the old hen—and get a breath of fresh air, then tuck them right back again in the warm, and you've made a first good start for the chicks. Their lungs being partly fish, partly mammal, take a couple of days to get used to air.

If you will not crowd the chicks in the brooder, keep at first the central heat point at 90 and 95, leaving good space for them to get away from this and cool off when they please, with always more ventilation above than any brooder says to provide, and feed right, never allowing a droopy chick to stay one minute in the bunch after found, I know that you, like myself, will raise more brooder chicks than the old hens will raise for you.

BROODER HOUSE HEATED BY SHEET IRON STOVE.

Some of the minor yet no less essential directions are, perfect cleanliness in the brooder. Once I bedded it in sand, but the sand held their filth, and they also ate too much of it and died. Since then I cover the brooder floor with oilcloth cut to fit. I keep several pieces of this, and each day at first put in a cleanly scrubbed piece, over which is spread chaff of some kind. This is changed often. After two or three days (from the first day in hot weather) the brooder door is left open in day time and they run out to eat and drink in a box set up against it. The floor of this is always damp. It saves them from the brooder rheumatism, caused by the heat of the floor. I never feed corn meal; it is too harsh, and bran is the same if fed in quantity. Oat meal constipates. I prefer the mixed commercial grains. Most farm women buy it by the hundred pounds. We give with it a certain amount of green stuff, bread, peppered, and squeezed from milk, as first week feeds, but the cracked grains form the bulk of the feed. If I find that some chicks persist in showing diarrhea, I put them out of the way, put in clean chaff, clean the feed dishes, and set in a saucer of a [illegible] germ killer. I have never had extreme epidemics of chick cholera, and yet it is and has been on the place for years.

One cannot, I find, expect as good hatches from the incubator set in cold weather as when set in warm weather, since the cold air circulating under it is bound to chill the under side of the eggs. I have secured better hatches by turning the eggs several times a day, thus getting the under side often up to the pipes on cold days, and at night placing a heavy newspaper in the nursery to help conserve the heat.

My test for the need of moisture is made by placing a foot square of cotton flannel, wrung from hot water, at the nursery bottom. If this dried out in a few hours, then there was need of moisture. I usually keep just this bit of cloth wet to meet the moisture need.

At night one must always turn up the lamp. The room chills at night, and if the eggs get too many chillings the hatch will not only be poor but there will be many crippled chicks.

If the chick dies in the shell at about the 12th or 15th day, and the thermometer has been running right all the time, I know then that the eggs were weak in fertility. They lacked strength to live longer. And yet, in all my experiments made in this line, and they cover several years, I do not find that more chicks die in the shell in an incubator run to order than under the setting hens, and I have never found my incubator hatched chicks weaker than the stronger.

I also find that I have better incubator hatches if the heat never climbs much above 103 at any time. If at the first the heat climbs high, do not be alarmed. The fluid in the egg saves the germ; but take the eggs out and give them a speedy cooling. It is toward the last that much heat kills quickly.—Ida M. Shepler, Henry Co., Ind.

DO WINTER EGGS REALLY PAY?

I have seen many articles written on how to produce winter eggs, but few mention the fact as to whether they are really profitable as a commercial business. True the farmer wants eggs to mix with those buckwheat cakes on a cold winter morning, and he will have them at any price if he can coax the old hens to lay them, but does it pay to produce them for the market? I think this can as a general rule, be answered in the negative.

In the first place, winter is the unnatural time for the production of eggs. The old saying that you can lead a horse to water but you cannot make him drink is quite true when it comes to winter egg production many times. At best one can not expect more than a 50 percent egg yield during the three coldest winter months, and the chances are nine out of ten that those hens that have done that well in winter will not lay 40 percent during the natural producing time, while their sisters will be laying from 65 to 85 percent, because they were not forced during the winter.

Again a great deal of extra labor is required to produce winter eggs, as well as more feed higher in protein content. A hen that is not expected to lay in the winter may be fed more carbohydrates and fat to keep her warm and not so much protein. A hen that has been highly fed for egg production in winter will, on account of close confinement, often become too fat and quit laying. This is a pretty hard thing for anyone to regulate. True, a hen must have some reserve fat in her body to produce at the unnatural time, but too much, to my mind, is worse than not enough.

Once more, by the time they begin to lay prices fall lower and lower, until by February they are only a few cents higher than during the natural time, March, April and May, when they cost far less to produce. I have concluded, after keeping a close watch of the results of experiments, and my own experience justifies the conclusion, that it does not pay to produce winter eggs on a large commercial poultry farm, nor in most cases with the small flock on the average farm. If I am wrong in my conclusion, I would like to know it. Let's here from others on this subject thru these columns.—Mae.

Can any of our readers enlighten us further on this subject?—Editors.

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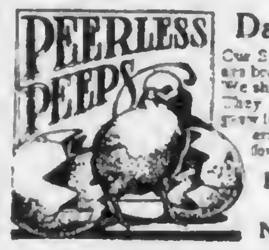

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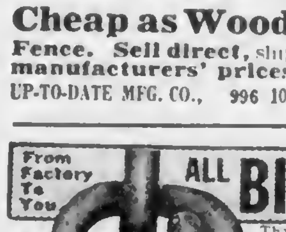

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ESTABLISHED 1880 PUBLISHED WEEKLY

Established 1880. Published Every Saturday.
Entered as second-class matter at the postoffice at Philadelphia, Penna.

The Lawrence Publishing Co., Proprietors
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General Office
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AGRICULTURAL APPROPRIATIONS

The first draft of the general appropriation bill to be passed by the present session of the state legislature calls for a total of $110,000,000. As the total resources of the state for the next two years have been estimated at something like $55,000,000, and as there are numerous items of state expense not included in the general appropriation, it is very evident that there will have to be a generous slashing of the bill to bring it within the limits of resources. The bill was drawn with the expectation that it would be cut down before passage, and the trimming process is thus passed on to the membership of the entire assembly. But regardless of the fact that this reduction is planned, the present form of the bill may be assumed to fairly represent the demands that are being made upon the assembly, and the amount which the combined interests of the state feel that they ought to draw for their support during the next two years. All of these interests appreciate that the entire demand can not be met, but each will be busy in pushing its demands, in the hope that the cut will be made on the other fellows. This will be the condition when the legislature comes to the final consideration of the measure, and the demands will be pressed according to the weight of the organization back of each interest. Here again, the lack of complete organization of the farmers will tend to minimize efforts to secure just and equal recognition of the demands for the purely agricultural requirements. It is to be hoped that the legislative members are sufficiently familiar with the importance of these requirements to insure them the consideration they deserve. What is lacking in organization in presenting these demands must be made up by individual effort, and farmers all over the state should use their influence to secure favorable action. First among the items in which farmers are directly interested are probably the State College appropriations. The loss of a number of the leading agricultural authorities and teachers from the School of Agriculture the past year helped advertise the dire need of this institution as nothing else could. These losses resulted largely from the fact that the financial needs of the College have not been adequately met, and other states, with more liberal allowances, were able to take advantage of the condition. The same lack of funds has left the College overcrowded and in need of expansion and equipment in practically every department. These things were all most forcibly impressed upon the public a few months ago, and the legislature as a whole is virtually pledged to a liberal appropriation for the College. The members should not be permitted to forget those promises in the rush of demands from other sources. It is conceded that in the first draft of the College bill, the institution is only asking for what is actually needed to meet the demands made by a growing body of students and an enlarging field of useful service. The additional bill providing $100,000 for extension work is to provide means of continuing and developing lines of work already inaugurated and in demand. It should be passed with the regular college allowance. Following these are the items providing allowance for farmers' institutes, the State Board of Agriculture, suppression of tree pests, inspections and regulation of feeds and fertilizers and aid of organized agricultural associations. These are all established lines of work with demonstrated value to the farming interests of the state. The demands for these various agencies have already been pared down to actual needs, and all farmers should unite in urging their passage.

RURAL CREDITS

The question of rural credits is receiving much attention at present among city as well as country people. Indeed its inception and continued agitation among city people tends to put it in the class with numerous other newly-discovered needs of the "rural districts." Like several other of these modern country issues, it would appear to warrant careful investigation by the farmers, in whose interests it is supposed to operate, before it is fully developed. It is barely possible that this is another farm question which the farmers will find it to their advantage to attempt to solve for themselves, rather than trusting to overly-interested agencies which have so lately discovered the manifold rural needs. The primary purpose of all rural credit schemes is to perfect a system whereby farmers may borrow money cheaply, on good security and easy terms as to time, interest, etc. The supposed advantages of such a reform are many, as stated by its various advocates, the most worthy being that it would overcome the present disadvantage to the farmer in his business relations with other interests in not being able to borrow on the same terms that big business concerns do. Back of this is the other argument that improved credit systems would enable the farmer to make improvements, increase production, reap larger profits, reduce prices of products, etc., etc. The theory is alluring, and the plans outlined are certain to win many advocates, but the more they are exploited, the more apparent it becomes that there are dangers as well as possible advantages in the schemes. This is not intended as an analysis of any particular plan or of the general purpose of all of the plans. We wish merely to suggest certain features of the proposals which we believe farmers will do well to give careful consideration. In the first place, how many farmers in this section of the country have experienced a serious curtailment of their business enterprises because of lack of credit? How many are now asking for easier terms upon which to mortgage their farms to enable them to make improvements on present holdings or increase their acreage? How many farmers in your community or county with the capacity to make good use of borrowed money are now unable to borrow the money on satisfactory terms? To sum up the preceding questions in one, does the demand for easier terms upon which to mortgage farm property come from the farmers or from those who have money to lend? We believe that these are pertinent questions in arriving at a clear understanding of the present agitation and the actual need of so-called improved credits. Then, if farmers are in need of such credit systems, can they not, by combination or a pooling of interests, perfect a safer plan of borrowing from each other or borrowing on combined interests rather than individual interests? Can they not, where necessary, combine and secure terms and privileges under present credit conditions which will yield their individual membership as advantageous and much safer credits than can be secured under the plans being offered? Is it not safer and wiser to leave the question of borrowing for agricultural development in the hands of men who are thoroly familiar with and financially interested in that industry, than to let down the gates to the class that is primarily interested in lending money on good security? Do not the men who have the capacity to wisely use easily borrowed money also have the capacity to form and manage co-operative credit organizations? We believe that these questions are pertinent in arriving at a satisfactory and safe solution of the problem, if such a problem exists. It must be remembered that the farmer's farm is more than a business asset. It is his home, his sustenance and his life. The agricultural prosperity of the country depends upon his maintaining it as such. Better curtail credits than endanger the possession of the home. There is much truth in Carlton's assertion that

> "Moth or beetle, drouth or tempest
> On a farmer's land may fall,
> But for first-class ruination,
> Trust a mortgage 'gainst them all."

FARM LABOR

The United States Department of Agriculture is authority for the statement that money wages of farm labor of the country increased about 3.2 percent during the past year, and 7 percent during the past two years. The total increase in the last ten years, or since 1902, has been 34 percent. Farm wages now are about 53 percent higher than the average wages during the eighties, and 65 percent higher than the low year of 1894. These averages are fairly typical of the tendency in the eastern states. The percentage of increase in wages per month with board in the last ten years has been 23.1 for Pennsylvania, 24.2 for New York, 24.3 for New Jersey, 23.1 for Delaware, and 25.5 for Maryland. This is but one item (altho an important one) in the cost of farm production. Other items have been increasing at approximately the same rate, with the possible exception of farm machinery. All have kept pace with the general increase in price of farm products and some have exceeded it. This is an important fact which many overlook in estimating the profits in farming at present prices. It does not require much investigation to disclose the fact that the high cost of living falls as heavily on the farmer as on any other class.

PENNSYLVANIA LEGISLATIVE NEWS

Initiative and Referendum.—The next fortnight will establish the policy of this legislature in regard to the initiative and referendum. All parties are committed to the principle, but there are differences as to manner in which government should be administered, and under what conditions the vote of the people shall be obtained. There are four propositions as to the initiative and referendum. One is for amendment of state constitution to confer it for state or local purposes, a comprehensive system being outlined. This is accompanied by a similar proposition for the recall, but it is not popular. The second is to establish direct origin of measures in the larger cities, the third to establish them in cities having under 100,000 population and in boroughs, and another, in a general township act, to provide them for rural communities. With all of these measures and the recall thrown in, there may be an abandonment of the entire lot. Commission investigation has been suggested, but this legislature is already suffering from so many commissions and investigations that nothing may come of it. The cities are demanding the commission form of government, and it is rumored that counties and townships want a change in administrative methods. The lack of system and uniformity displayed by the advocates of changes may result in nothing tangible.

Food Bill Doctored.—The old battle for pure food is being fought over again. The interests opposed to more strict state regulation have succeeded in so amending the bill as to give the strictest law relative to foods in the country, and thus seriously hampering administration. This was done by a provision that any wholesaler or other dealer having foods, which include groceries, adulterated or misbranded, bought outside of the state shall not be prosecuted, but the facts certified to Washington for federal action. As most of the groceries used in this state come from outside the administration of such a law is practically taken out of the hands of state authorities.

Road Routes.—The proposed additions to the main highway routes, of which almost 100 have been asked of this legislature, will be listed and submitted to the house this week. It is improbable that many will be approved, as there is a disposition to hold down until the policy in regard to township road building and the $50,000,000 bond issue for roads is more defined. This should be established by the end of the week. The bond issue is up for final action within 10 days, and if approved goes to the people in November.

Final Fight on Liability.—The final fight against the employers' liability bills, against which some manufacturing and farming interests have been protesting, will be made in the senate in April. A hearing is to be accorded the opponents of the bill by the senate corporations committee on April 8, at which the objections to the measure will be outlined. However, public sentiment here and the force of the administration are both behind the bills and their passage is predicted.

Many Bills on Calendars.—As a result of the influx of proposed legislation and the disposition of house committees to report out all bills, the calendars are burdened by work, and if adjournment is to be taken by May 25 or even June 25, it will require the hardest kind of work. Among agricultural bills upon which the house will record its final action this week are: The new township road law, providing for state aid under direction of highway department; for return of 95 percent of personal property tax to counties where originating; for abolition of state taxes on all township or borough loans; woman and child labor and minimum wage act; non-partisan ballot; the early closing bill for saloons; providing for farm demonstrators along lines of state orchard inspection and demonstration system; requiring payment of wages at least twice a month; requiring constables to cut down and destroy trees affected by tree diseases; providing new scale of remuneration for cattle killed because of disease; providing legal indemnity plan for sale of trees, shrubs, etc.; establishing State Country Life Commission; regulating payment of rent for farms in cash or in produce, and providing for collection; increasing state police force for purposes of rural patrol; changing dates of assessments in townships; making closed seasons on quail and wild turkeys; putting elk and skunks on the protected list; regulating tenure of office of teachers so that those serving for 10 years shall be permanently employed; providing method of condemning turnpikes for state highways; the pure lime bill; enabling cities or boroughs to buy bridges; and providing methods for destruction of noxious weeds.

The Minimum Wage.—The minimum wage question, which has become confused in the public mind with the vice problem, is really one which affects every employer in the state, and when considered aside from the purely social aspect, is of grave interest to farmers. The bill provides for the establishment of a state minimum wage commission to which any person who feels that he or she is not being paid enough, considering the investment and income of the employer, may appeal. Then the power of the state is to be invoked and the business of the employer will be gone into and a wage recommended. If the employer or employee refuses to accept, an appeal may be taken to court. If not, the matter stands.

The Oleo Fight.—The fight over oleo will come in the senate. Bills to abolish the law prohibiting the use of coloring matter are pending, and the administration is pushing a bill which prohibits coloring matter and establishes a standard of color known as "70 percent white." The odds are on the administration bill.—Hamilton, Harrisburg, March 31.

NEW JERSEY FARM NEWS

Farmers Clearing Land.—Farmers whose lands adjoin railroad tracks have been busy clearing their properties from underbrush and plowing the land for a distance of 100 feet on each side of the track. The new state law bars property owners from obtaining damages from railroad companies unless this is done.

To Change Canning Rules.—Convinced that under present restrictions quantities of wholesome food products are now going to waste, the state board of health has called a conference of canners to be held April 11, to revise rules and regulations governing the canning industry in New Jersey. Incidentally, the board will make a general revision of the rules to be in force this year. When the canning industry was under investigation last year the state board discovered conditions of such a character that a rule was adopted prohibiting absolutely the manufacture of paste or soup stock by the canneries. Since then it has been learned that the enforcement of this rule has resulted in many canners abandoning the manufacture of by-products, some of which, under proper conditions, are regarded as wholesome. An effort will now be made to revise the rules so as to prevent unnecessary waste, while at the same time safeguarding the purity and wholesomeness of the food product. The board will also take up the question of child labor in the canneries, from a sanitary standpoint. It is claimed that the practice of importing aliens to the canning sections and permitting them to bring their children with them to the canneries leads to unsanitary conditions.

Animal Industry Bureau Defeated.—The legislative bill to constitute a commission of animal industry with an appropriation of $50,000 was defeated. It was opposed by the representatives of the rural counties, who could not understand why the most thickly populated and non-agricultural county in the state should be so interested in the measure. The bill would make a veterinary a member of the commission at $10 a day for his work. There is none on the present cattle tuberculosis commission, but veterinarians are employed by that body.

Cranberry Bill.—Both houses have passed the bill to allow cranberry bog dams to be built 8 feet high, instead of 5 feet, as at present. It will become a law.

Other Bills of Interest.—House Bill No. 331 gives local boards of health additional power to enforce pure food and drug laws. House Bill No. 369 prohibits any person from hunting birds in the state by moonlight, or with the aid of a lamp or other artificial light. Senate Bill No. 139 fixes the open season for quail, rabbit, squirrel and other small game between November 10 and December 1.

State Aid Roads.—Only a small amount of the mileage of state roads can be taken care of this year because of lack of funds. The automobile license fund amounts to about $450,000, which must be apportioned among 21 counties. A bill is before the legislature increasing the annual appropriation of $250,000. Should this pass, the amount to be expended by the state will be close to $1,000,000. Failing this, the entire fund will be in the neighborhood of $850,000.

To Investigate Country Schools.—Hardships alleged to exist in the smaller counties of the state have led to the introduction of a concurrent legislative resolution providing for a commission to investigate and report on the adaptability of the present laws to counties of less than 150,000 population. The resolution is aimed at the expensive construction required for schools, also at the "fads and frills" that the present laws require in the operation of the school system.

To Increase Forest Output.—Alfred Gaskill, State Forester, is anxious to increase the forest output. Half of the area of New Jersey, 2,000,000 acres, is woodland, and this land only brings in at the rate of 50 cents an acre, or about $1,000,000, whereas with proper attention almost $50 an acre should be realized. Mr. Gaskill declares that the cutting down of young trees for firewood should be stopped at once.

Educating Thru Clubs.—Thruout Mercer County preparations are being made for a corn growing contest in connection with the work of the rural schools. So far, about 60 boys have entered the one-acre contest alone. Potato clubs for the boys and tomato clubs for the girls are also being organized. Prizes to the value of $300, secured thru the Trenton Chamber of Commerce, will be offered.

Little Milk Surplus Seen.—Speaking of the milk situation in the New York and Newark markets, The Milk Reporter says: "There is little surplus in evidence, but the amount is insignificant. As a matter of fact, at no time this winter has there been sufficient surplus milk in sight to justify reduced prices announced as effective on January 1 and March 1. Market receipts for February, 1913, amount to 1,328,068 cans of milk and 47,253 cans of cream and unsweetened condensed. The respective daily average is 47,252 and 1,752 cans. Compared with receipts of February, 1912, it is a gain of 2,668 and 110 cans daily, the whole equal to 3,211 cans of plain milk daily.—D. T. H.

NEW YORK STATE NEWS

Highway Department Probe.—The governor has appointed a special commissioner to investigate the highway department of the state, with sufficient authority to make the investigation thoro. It means that the governor proposes to make a house-cleaning in the department and he will prosecute where there is sufficient evidence of criminality. The examination of witnesses will begin this week; hearings will be in secret it is said.

State Power Plants.—A bill passed the senate March 27 to permit the state conservation commission to utilize the surplus waters in barge canal dams in the Mohawk River at Crescent and Vischers Ferry, in generating electric power. Another bill was passed to permit formation of corporations to develop privately-owned water power. The first bill, if it becomes law, will commit the state to a policy of state ownership and operation of hydro-electric plants, the power to be furnished to municipalities at cost. The initial plant will cost $650,000, and it is said that if the state embarks upon this project it will involve eventually an expenditure of $200,000,000.

Farm Trains Started.—The New York Central, co-operating as usual with the state agricultural college, ran a gardening train along Hudson River towns this week. It was equipped with demonstration hot beds, irrigation models, gardening tools and with about everything that goes to make up a first-class gardening outfit. Lecturers discussed gardening topics and found interested audiences.

Experiment Station Wants $100,000.—The state experiment station, at Geneva, is asking the legislature for $100,000 for new buildings. It is probable it may grant it. The last two legislatures passed such bills, but the governors both years, vetoed the appropriations on account of lack of funds. It is hoped by friends of the institution that Dr. Jordan may get this year what he is justly entitled to for the station.

Milk Stations.—If a bill now before the legislature becomes a law, all persons who buy and ship milk will have to get permission of the state commissioner of agriculture before they can do so. They must satisfy him of their financial responsibility and good faith. The commissioner has authority to revoke license where it is found that a shipper is not financially good or has failed to make prompt payments.

More Agricultural Schools Wanted.—There is just a possibility that in our eagerness to educate the young people on the farm in subjects that pertain to farming we may overdo the matter; or rather, underdo it. There is a bill now before the legislature providing for the establishment of agricultural schools in towns. Upon the application of 25 taxpayers the town board is authorized to submit to the people of the township a proposition to provide funds and establish a school. The state will contribute to the support of the schools as in the case of high schools at present, but the main part of the cost of maintenance must be borne by the town where the school is located, altho arrangements may be made with the school district to share in the expense. We do not look for the passage of the bill.—New Yorker.

AGRICULTURAL CREDIT COMMISSION

President Wilson has appointed a commission of seven men to conduct an investigation of agricultural credit systems and co-operative organizations among farmers in European countries. The commission is made up as follows. Senator Fletcher, of Florida; Senator Gore, of Oklahoma; Congressman Moss, of Indiana; Dr. Clarence J. Owens, of Maryland, Managing Director of Southern Commercial Congress; Kenyon L. Butterfield, of Massachusetts, President Amherst College; Dr. John Lee Coulter, of Minnesota, government's expert on agricultural statistics; and Col. Harvie Jordan, of Georgia, president Southern Cotton Growers' Association.

This commission will co-operate with the American Commission on Co-operative Credits now representing all but 12 of the states, and will make official report to Congress.

NOTES AND CATALOGS

Solid Comfort Vehicles.—Regardless of the rapid growth in the use of automobiles, most of us have to depend upon the good old horse and the horse-drawn vehicles for every-day use. And what is more, we are able to enjoy them, even if our more fortunate neighbors are passing us occasionally in their motor cars. With the modern makes of buggies and wagons, and with a good horse or team, there is much solid comfort in the old reliable turnout. Nowhere is this better shown than in the new catalog issued by the Sears, Roebuck & Co., entitled "Solid Comfort Vehicles." This illustrates and describes a very complete line of vehicles, from light runabouts priced at $25; up to the 1913 Triple-Panel Automobile Seat Buggy, specially priced at $59.90. This latter is a truly wonderful buggy, which every prospective purchaser should investigate before buying. The catalog also describes a full line of phaetons and surreys, ranging in price from $55 up to $130; also road carts, spring wagons, pony traps, and heavy road and farm wagons and trucks. The new Sears, Roebuck general catalog is also ready for distribution. This is more complete than ever before, having 1,300 pages and listing goods in every department of merchandise. These catalogs are free upon request. Address Sears, Roebuck & Co., Chicago., and ask for Vehicle Book No. 84 P 56, and General Catalog 84 P 56.

Green Mountain Silos.—A new 34-page booklet is being distributed by the Creamery Package Mfg. Co., describing the superior qualities of the Green Mountain Silos. A new feature of this silo which is winning wide popularity is the dipping of all material in creosote preservative, which preserves the lumber and saves cost of painting. This process and other features are fully described and illustrated. The booklet will be sent free upon receipt of postal card request. Address the Creamery Package Mfg. Co., 345 West St., Rutland, Vt.

Threshing Outfits.—The new catalog of the A. B. Farquhar Co., York, Pa., announces the new and improved features of this old, reliable line. This is the 56th annual catalog issued by the firm since its organization in 1856. The absolute reliability of the Farquhar machines has been well established. The feature of the new catalog is the line of threshers and grain separators offered. These include small 20-inch cylinder machines for individual use, up to the large 36-inch machines for job-work. The Farquhar threshers won the first field test in threshers at the Philadelphia Centennial in '76, and they have remained the standard ever since. The smaller machines are leaders for individual use. They have won their popularity on the features which the individual user wants—simplicity of construction, lightness of draft and great efficiency in all kinds of grain. These machines are equipped as wanted with baggers, stackers etc. The catalog will be mailed free to anyone writing for it. Address A. B. Farquhar Co., Ltd., Box 519, York, Pa.

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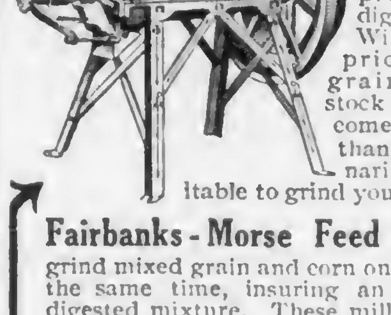

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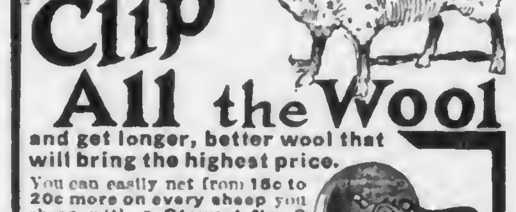

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Grange

This department is conducted by R. P. Kester, Lecturer of Pennsylvania State Grange. Notes, queries, comments and news of grange work are invited from readers. Obituary notes and news of purely local interest can not be used. Address all communications for this department to R. P. Kester, Grampian, Pa.

EDITOR'S NOTES AND COMMENTS

> "He is a slave most base,
> Whose love of right is for himself,
> And not for all the race."
> —Lowell.

They who wait until a good cause becomes popular before they take hold are a dead weight upon society.

The ambition of the grange motto, "A grange in every township," is more than realized in the State of New Hampshire, for they exceed that apportionment. There are 25,000 farms in the state and they have a grange membership of 30,000. Imagine the good if every grange state was so thoroly organized.

It is gratifying to the State Lecturer to learn, from letters received, that so great a number of the lecturers of subordinate granges realize their responsibility and the importance of their work. If one officer is more vital to the success of the meeting than another, it is the lecturer. Probably the most difficult thing is to get people to respond when duties are assigned, and the next most difficult thing is to tactfully restrain those who may have a tendency to talk too much.

Every grange should have one or more continued lines of subjects tending to some definite end discussed at each meeting. For example, the roads, the schools, home sanitation, home adornment, co-operation, etc. Unless we have an objective point in view when we move, we are not likely to make much progress.

The Editor of this department invites news items and discussions of timely grange subjects from members in New Jersey, Delaware and Maryland. Help us make this department a clearing-house for exchange of good practical grange suggestions and a source of timely grange news.

FARMERS' INSTITUTES

Another season of farmers' institutes held under the direction of the State Department of Agriculture has just closed. By all reports, the meetings of the past season have been well attended in most instances, and are pronounced unusually satisfactory and helpful. Where the reverse was true, it was usually on account of the lack of activity on the part of the local management. The grange has always stood by the farmers' institutes, and where there is a good live grange or other farmers' organization, a good institute is assured.

Among the agencies responsible for the advancement of agriculture and the betterment of rural conditions during the past 15 years, the farmers' institutes must be counted as a great factor. They have provided a much-needed opportunity for meeting together to exchange experiences as well as to hear the most advanced methods and the interpretations of scientific research. In addition to that, there is left in the community an inspiration and a greater ability to appreciate the beauty and possibilities of rural life.

The farmers' institutes should be continued by an appropriation that will permit of their extension and improvement, and funds provided as will permit the department to meet the many calls for an extension of the work.—R. P. Kester.

A HUSTLING MARYLAND GRANGE

Still Pond Grange, Maryland, is one of the first in this part of the state to take advantage of the school house for meeting purposes. Usually a suitable hall will command a rather high rent, and for a grange which has not over 100 members the school building is an admirable place. The one which we use has a vacant room, which we have fitted up completely for half the cost of a year's rent in our other place. We have three long tables which, when not in use as tables, serve as benches! The tops fold up, furnishing benches with high backs. We have a cupboard-buffet for the dishes and a long box to hold the implements, which also serves as a bench. About 20 chairs were donated by the members and 100 second-hand chairs have been bought very cheaply from a dismantled church. So we are well equipped.

We have a blackboard, which is used as an "exchange." Anything the members want to buy or sell is written on the board, so that all may see it. We hold our meetings on Saturday afternoons, so that the members who do most of their dealing at the last of the week can be with us; then, too, we do not conflict with the school hours. We aim to hold a public meeting at least once a month, at which time a good speaker discusses topics of interest to all. On March 8 Prof. Roy H. Waite, of the Maryland Agricultural College, gave use a lantern talk on poultry raising, which came at a very opportune time.

We also arrange for a "special" once a month. At this meeting, the business is transacted in the afternoon, the benches are turned to tables and the members "turned to diners." After the feast of good things comes the "feast of reason." Each member is expected to do just as the lecturer requests. If not, he or she is fined 5 cents. When the barrel is full of nickels, we will have enough to buy a flag. At present, it seems as if someone will have to donate it. We therefore have very good programs. Occasionally we "indulge" in games, which helps keep up interest and keeps us young.—Evelyn Harris.

JUVENILE FAIRS

The officers of the McKean County (Pa.) Fair Association have decided on what seems to be a sensible undertaking, and that is a juvenile department of the county fair. Mrs. Mary D. Howden, Coryville, lecturer of the Pomona Grange of that county, is superintendent of the young people's department.

Premiums are offered to young people under 16 years of age for vegetables, cooking, canning, flowers, needlework, drawing, essays, etc. Free seeds will be furnished to all boys and girls applying for them. Prizes will be given for the best essays telling how the product was grown. Congressman Patton, of that district, has offered a silver cup to the boy or girl who exhibits the best display of products grown from government seeds. Worthy Master Creasy will present the winners of first premiums with Certificates of Merit suitable for framing.

Other county fair associations, also Pomona granges, might well take a cue from this and arrange for similar juvenile contests. Youth is the time when spirited contests most naturally appeal to us, and we might well make use of the opportunity to enlist the interest of the young people in agriculture and the production of high-grade articles.

PUBLIC LIBRARIES

The members of Bunker Hill Grange, Lebanon Co., Pa., are to be commended for their efforts in starting a free library in their town of Annville. The library will be equipped with several thousand volumes of technical and agricultural books, to be used by the farmers for study and improvement. The building will contain a reading room, which will be kept open afternoons and evenings. The people of the village will be admitted free of charge.

We hope the time is coming when every grange will have a library and a reading room fitted up for its members. Not only a reading room, but a room also where the young people may go for games and entertainment. This would be better and safer than the promiscuous and often questionable resources now open to the young people to meet their need for social gatherings.

New York Scholarships.—The New York State Grange will again offer 12 scholarships to the state agricultural college, at Ithaca; value, $600. Last year there were 52 applicants and 45 took the examinations. It is hoped that there may be as general response to the offer this year.

Easy to Load—Easy to Unload

Only 42 inches high from ground to top of box at the rear wheels. Saves that back-breaking lift, and makes it quicker and easier to load.

Apron Runs DOWN Hill. Being lower behind than in front, load travels downward. This gives much lighter draft and saves the horses where the work would otherwise be hardest. You know it's easier to haul a load **down hill than up.**

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We also build the Moline Spreader which is of the same construction, but with a Return Apron.

Be sure to examine these Spreaders before buying any other. You will find a Flying Dutchman Dealer near you.

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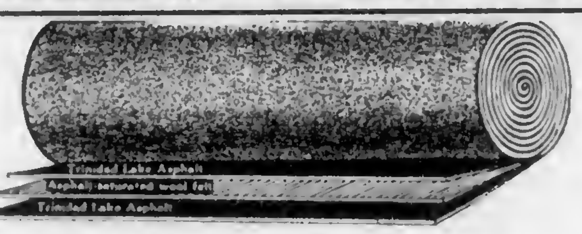

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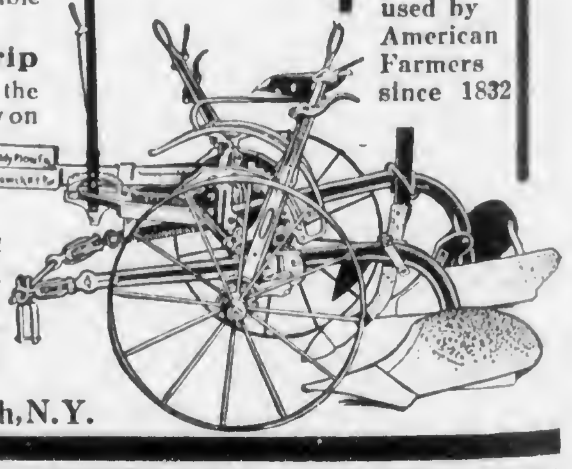

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"Yes, the roads are bad but we'll get through all right, we both drive *Studebaker* wagons."

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"After a reputation earned by half a century of honest wagon building, Studebaker wouldn't dare sell us a wagon that wasn't right, and that wouldn't stand up to its work.

"Studebaker isn't like some of the new concerns that get together a few dollars and decide to go into the wagon business. Studebaker has been building wagons for years and years, and building a reputation at the same time.

"And that good name and reputation is the biggest asset Studebaker has. It is worth the price of thousands of wagons, and they are not going to jeopardize the confidence we have in them by letting one poorly built wagon leave the factory.

"That's the reason Studebaker doesn't try to put out a cheap wagon. The few dollars saved wouldn't commence to pay them for the loss of a man's confidence, and it is also the reason that they don't try to meet cheap competition. 'Let some other fellow build the cheap wagons' they say, Studebaker wagons are built to last.

"Have you ever noticed the number of wagon factories that spring up, all over the country, do business for a year or so and then die out—nobody knows where they go.

"But Studebaker built wagons for our grandfathers and they'll be building wagons for our grandchildren. It's an old, old house and a good one to tie up to.

"And Studebaker not only builds farm wagons, but they make mighty good harness to fit every vehicle they sell, and for any sized horse—and the harness is just as well made as the wagons. The Studebaker name is on it and the Studebaker name means a lot on a set of harness.

"Studebaker also builds business wagons, buggies, surreys, dump wagons, sprinklers and sweepers, and every year they put out thousands of automobiles. I am told they will manufacture, and sell, 50,000 automobiles this year.

"And just because I have confidence in anything that the Studebakers put out is the reason I drive a Studebaker wagon, and always will, and that's why I say, 'No matter how rough the roads may be we'll pull through.'"

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Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., March 31, 1913.

The flooded conditions of the Middle West have made shipments extremely irregular. Butter was in light receipt, and under fair demand prices continued firm. Egg receipts were more liberal this week and prices declined about 45 cents per case. The demand for dressed poultry was sufficient to take care of the supplies and prices remained about steady. Vegetables and fruits were generally quiet at unchanged prices.

Butter.—Western creamery, 41c; extras, 39@39½c; firsts to seconds, 36@38½c; special prints, 45@48c; near-by prints, 42c.

Cheese.—New York full cream, 17c; skims, 10@13c, according to quality.

Eggs.—Candled, 20@22c doz.; extras, 20c. Current receipts at $5.55 per standard case.

Poultry.—Fowls, 19c; old roosters, 12@12½c; spring chickens, 18@19c; ducks, 18@19c; pigeons, 32@36c pair; turkeys, 19@20c.

Dressed Poultry.—Western fowls, 19c; roosters, 14c; chickens, 18@19c; turkeys, 20@25c.

Vegetables.—White potatoes, choice, 68@72c bu. Onions, 10@25c bu. Cabbage, $5.00@8.00 ton. Lettuce, $1.50@2.50 basket. Cucumbers, $3.00@5.00 basket. Celery, 25@60c bch. Spinach, 80c@$1.00 bbl. Kale, 40@65c bbl. Egg plant, $1.50@2.25 box. String beans, $2.00@3.00 bu. Peas, $2.00@4.00 basket. Peppers, $1.50@2.00 carrier. Tomatoes, 75c@$1.75 carrier. Watercress, $1.50@2.00 100 bchs.

Fruit.—Apples, choice varieties, 25@75c hamper, $2.00@3.50 bbl. Cranberries, $1.25@2.00 crate. Strawberries, 20@60c qt.

Hay and Grain.—No. 1 timothy, new, $17.00@17.50; No. 2, $14.00@15.00; No. 3 do., $11.50@12.50. No grade, $8.00@10.00. Clover mixed, No. 1, $13.00@13.50; No. 2 do., $11.00@12.00. No. 1 tangled rye straw, $13.50@14.00. No. 1 wheat straw, $10.00@10.50; No. 1 oat straw, $10.00@10.50. New shelled corn, No. 2 yellow, 58@58½c; No. 3 yellow, 56½@57c. No. 2 red wheat, $1.00½@1.01½; No. 3 do., 95½@96½. No. 2 white oats, 39@39½c. Standard white, 38@38½c; No. 3 white, 37@37½c.

Hides and Skins.—Steers, abattoir, 15¾@16¾c; do. country, 13¾@14¼c. Cows, abattoir, 14¾@15¼c; do. country, 13¼c. Bulls, abattoir, 12¼@12¾c; do. country, 11¼c. Calf skins, Nos. 5 to 12 and up, $1.35@2.45; do. green, 13@14c lb.

Seeds.—Timothy, $3.15@3.25 bu.; clover, white, $25; do. crimson, $6.25; do. mammoth, $14.50; do. sweet, $13.00; do. alsike, $13.25; red top, per bu., $13.50; alfalfa, $7.00@10.00; Canada field peas, $2.35; vetch, $8.50; rye, winter, $1.37; spring, $2.25; soy beans, $3.25; barley, $2.50; buckwheat, $1.50; cowpeas, $3.00@3.25; millet, $1.90@2.75; oats, $1.25.

Coffee.—Rio, 7s, 11⅝c; Santos, 4s, 13⅝c. Mild Coffee—Cordova, 15@17c.

Provisions.—City beef, smoked and air-dried, 22@23c. Beef hams, 31@33c. Pork, family, $21.00@22.00 bbl. Hams, cured, 14½@15½c; skinned, 14¾@15¾c; smoked, 17@18c. Other hams, smoked, city cured as to brand, 16@18c. Picnic shoulders, 10@10¾c; do. smoked, 12@12½c. Bellies in pickle, 15@16c. Breakfast bacon, as to quality, 17@22c. Lard, refined, 11¾@12c; do. in tubs, 11½@12c; do. kettle rendered, 11¾@12c. Tallow, prime city, 6⅞@7c; do. country, 7c; do. dark, 5¾c; do. cakes, 7¼c.

Sugar.—Cut loaf, $5.15 cwt.; cubes, $4.60; powdered, $4.45; granulated, $4.35; standard granulated, $4.40; crystal A, $4.35.

Flour.—For 196 lbs., in wood, winter clear, new, $4.00@4.25; do. straight, new, $4.40@4.60; favorite brands, $4.85@5.25. Rye flour, Penna., $3.50@3.65.

BALTIMORE PRODUCE

Baltimore, Md., March 31, 1913.

Under a limited supply the butter market remained firm during the week. Egg prices were steady, altho receipts were ample and only strictly fresh stock is wanted. Live poultry was in good demand at steady prices. Fruits and vegetables remained about steady at last week's prices.

Butter.—Creamery, fancy, 32@36½c; do choice, 33@34c; prints and blocks, 34@37c; Maryland and Penna. rolls, 20@21c; prints, 20@21c. Process, 26@28c.

Cheese.—Flat, 17½c; Daisy, 18@18½c.

Eggs.—Md. and Penna., firsts, 18c; western, 18c; southern, 18c.

Live Poultry.—Hens, 19c; chickens, 20@22c; old roosters, 11c. Turkeys, 24@25c. Ducks, 16@20c. Geese, 14@15c. Guinea fowls, 20@30c.

Dressed Poultry.—Turkeys, 24@25c; chickens, 20@21c; roosters, 11@12c; ducks, 20@22c; geese, 11@17c.

Vegetables.—Potatoes, white, 50@55c bu. Sweets, $2.00@2.50 bbl. Cabbage, 90c@$1.00 crate. Danish, $6.00@8.00. Onions, 20@30c bu. Lettuce, $1.25@2.00 basket. Egg plant, $2.00@2.25 crate. Peppers, $1.50@2.00 crate. Squash, $1.25@1.50 basket. Spinach, 40@50c box. Cucumbers, $3.00@3.50 basket. Beans, green, $2.50@2.75 basket. Celery, $1.75@3.00 crate. Turnips, 10@15c box. Cauliflower, $2.50@2.75 bbl. Horseradish, $1.25@1.50 bu. Beets, 2@4c.

Fruit.—Apples, new, $2.00@3.50 bbl.; 50c@$1.00 bu. Cranberries, $8.00@9.50 bbl. Strawberries, 20@40c qt.

Grain.—Wheat, No. 2 red western, $1.06½; spot, $1.06½. Corn, spot, 54½c; contract, 55½c. Oats, No. 2 white, 39½@40c; standard white, 37½@38c. No. 3 white, 36½@37c. Rye, 55@65c.

Hay and Straw.—No. 1 timothy, $16.00; No. 2 timothy, $15.00; No. 3 do., $12.00@14.00. Choice mixed, $14.50; No. 1 clover, $11.50@12.00; No. 2 do., $9.00@10.00. No. 1 tangled rye straw, $10.00@11.00. No. 1 oat straw, $9.00@10.00. No. 1 wheat straw, $7.50@8.00.

Millfeed.—Spring bran, $22.00@22.50. Middlings, flour to white, $26.00@28.00; western middlings, $22.50@23.00; city mills mids., $21.00@24.50.

NEW YORK PRODUCE

New York City, March 31, 1913.

While butter receipts have been light, the market is very dull and the demand has been more than satisfied. Prices have declined 1@1½c on all grades of creamery stock. The demand on eggs is slack, receipts are ample, and prices are fairly steady. In the absence of good dressed poultry, prices have advanced a shade. This is a temporary condition, however, since the demand is very slow and fresh stock is in transit. Vegetables are about as last week, except potatoes, which are higher.

Butter.—Creamery firsts to extras, 37@39c; thirds to seconds, 33@36c; factory, 24@26c; state dairy, 27@37c; packing stock, 20@24c; process, 23@29½c.

Cheese.—Whole milk special, 17@17½c; do., common to fancy, 15@17c; skims, 5@13½c.

Eggs.—State and near-by, 18@22c; fresh gathered, 14@20c; mixed, 19@20c.

Dressed Poultry.—Turkeys, dry, 19@24c; chickens, Penna., 15@28c; fowls, 16@18c; old roosters, 14c; ducks, 15@20c; roasters, 17@20c.

Live Poultry.—Fowls, 23c; chickens, 19c; old roosters, 14c; ducks, 22c; geese, 13c.

Grain.—Easy. Wheat, No. 2 red, $1.10½; No. 1 Northern, $1.00¼. Corn, 58c. Oats, standard white, 38½c.

Vegetables.—Potatoes, state, $1.65@1.80 per 165-lb. bag. Cabbage, 60c@$1.00 crate; do. Danish, $6.00@8.00 ton. Green beans, $1.00@4.00 basket. Carrots, 60@85c bag. Cucumbers, 50c@$1.00 dozen. Lettuce, 25@50c doz. Squash, $1.50@2.00 bbl. Celery, $1.00@2.50 case. Horseradish, $2.00@4.00 cwt. Parsnips, 75c@$1.00 bbl. Turnips, 40@75c.

Fruit.—Apples, $1.75@4.00 bbl., according to variety. Pears, 60c@$1.15 basket. Cranberries, $6.00@10.00 bbl. Strawberries, 10@25c qt.

YORK PRODUCE MARKET

York, Pa., March 23, 1913.

The markets, in general, were without change last week. There is considerable lettuce and radishes of home raising offered. Potatoes are beginning to move more rapidly, showing that the cellar supply is nearly exhausted. Poultry is in demand by the dealers, offerings being as high as 17 cents per pound.

Butter.—Country, 30@34c; separator, 33@35c. Milk, 6c per qt.

Eggs.—16@17c doz.

Poultry.—Hens, 15@16½c. Dressed poultry, 50c@$1.00.

Vegetables.—Potatoes, 10c half peck; 60c bu.; cabbage, 3@5c each; lettuce, 3@8c; beets, 3@5c bunch; radishes, 2@5c; turnips, 6@9c per ½ pk.; onions, 10c per ½ pk.; lima beans, 12c qt.; soup beans, 10c qt.; sweet potatoes, 10c per half peck; spinach, 10c per ½ peck; parsnips, 10c per ½ pk.; sauer kraut, 5@8c qt.; lard, 14@16c lb.; corn meal, 5c qt.

Fruit.—Apples, 10@25c a half peck; strawberries, 18@20c box.

Retail Grain Market.—Wheat, $1.13; corn, 68c; oats, 50c; bran, $1.25 a cwt.; rye, 78c; middlings, $1.45 a cwt.

Wholesale Grain Market.—Wheat, $1.03; corn, 56c; oats, 37c; rye, 68c.

WASHINGTON PRODUCE

Washington, D. C., March 31, 1913.

Eggs.—Near by, fresh, per dozen, 18c; southern, per doz., 17c.

Cheese.—New York, new, per pound, 18c; flat, 18c.

Butter.—Best prints, per pound, 38c; tub, 37c; process, 28@29c; undergrades, 25c.

Live Poultry.—Hens, per lb., 18c; roosters, 10c; springers, 20@23c; turkeys, 20@22c; geese, live, 12@15c; ducks, 16@18c.

Vegetables.—Potatoes, bbl., $1.25@1.50; 50@70c bu. Onions, 50@75c per 100-lb. bag. Lettuce, per bas., $1.25@2.50. Beans, $1.50@2.50 basket. Peppers, per crate, $1.50@2.50. Egg plants, per box, $1.50@2.00. Squash, per bbl., $1.50@2.25. Beets, $1.50@2.00 per 100 bchs. Mushrooms, per lb., 25@40c. Carrots, 1½@2½c bch. Cabbage, $1.00@1.50 crate. Radishes, 50c@$1 per 100. Cauliflower, $1.25@1.75 crate. Apples, $1.50@4.50 bbl.

WILMINGTON PRODUCE

Wilmington, Del., March 31, 1913.

Trading on the markets during the week was normal, and prices remained at about last week's figures.

Fruits.—Apples, 50@75c basket; $3.00@4.50 bbl. Strawberries, 35@50c box.

Vegetables.—Potatoes, 60@80c bu.; $1.75@2.00 bbl. Cabbage, 75c@$1.00 bbl.; 25c basket. Onions, 40c basket. Celery, 60@75c doz. Spinach, $2.00 bbl. Sweet potatoes, 65c basket; $2.50@3.50 bbl. Kale, $1.00 bbl. Lettuce, $3.00 basket.

Poultry.—Chickens, live, 16@17c; do. dressed, 18@20c. Ducks, 13@14c lb., dressed 16@18c.

Eggs.—18c.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., March 31, 1913.

The general flood conditions have made it necessary to supply the cattle market in a limited way with Lancaster County and other near by stock. Prices have largely advanced under these conditions.

	Beef Cattle	Sheep and Lambs	Hogs
Total for week	5,139	12,305	4,655
Previous week	4,997	11,655	5,180

Best steers	$8.75@9.00
Choice steers	8.50@8.62½
Good	8.37@8.50
Medium steers	8.00@8.50
Common steers	7.50@7.75
Bulls	4.75@6.75
Fat cows	4.50@6.50
Thin cows	3.00@4.00
Milk cows	40.00@65.00

Veal calves are steady to firm.

Best calves	$11.50@12.50
Good to choice do.	10.00@11.00
Medium	7.00@8.00
Common do.	6.50@6.75
Thin do.	5.00@8.00

Sheep and lambs are barely steady.

Extra wethers	$7.00@7.25
Choice wethers	6.50@7.00
Good wethers	6.00@6.50
Common to medium	4.00@5.50
Ewes, fat	5.50@6.00
Extra lambs	9.50@9.75
Good to choice do.	9.25@9.50
Common to medium	6.00@8.50

The hog market continued steady thruout the week, westerns selling at $13.00.

City Dressed Stock.—Choice classes of dressed meats are a shade higher. Trade is normal. Steers, 13@14½c; heifers, 10@13c; cows, 9@12c. Veal calves, 11@16c, country dressed calves, 13@14½c; extra do., 15c. Sheep, 10@11c; extra wethers, 12c. Spring lambs, 15@17c. Hogs, 13½c.

PITTSBURGH LIVE STOCK

Pittsburgh, Pa., March 31, 1913.

The cattle market opened strong this morning after the lull of last week occasioned by interrupted receipts. There were 20 cars on sale today.

Good to choice	$8.70@9.00
Good, 1300 to 1400 lb.	8.50@8.70
Medium to good, 1200-1300 lb.	8.00@8.40
Tidy, 1050-1150 lb.	8.30@8.50
Fair to medium, 900-1100 lb.	7.50@8.00
Common to good fat oxen	5.00@7.00
Common, 700-900 lb.	5.60@6.75
Common to good fat bulls	4.00@7.25
Common to good fat cows	4.00@7.00
Heifers, 700 to 900 lbs.	5.00@7.85
Bologna cows	3.75@4.25
Fresh cows and springers	20.00@80.00

Calves.—Receipts were 600 head. Market is slow. Receipts have been light for some days.

Heavy and thin calves	$5.00@7.00
Veal calves	9.00@12.00

Hogs.—The hog market is slow. Receipts are very light and prices unsettled at a much higher basis.

Prime heavy	$10.25@10.40
Prime medium weights	10.40@10.50
Heavy mixed	10.40@10.50
Best heavy Yorkers	10.40@10.50
Light Yorkers	10.40@10.50
Pigs as to quality	10.40@10.50
Common to good roughs	8.50@9.00
Stags	7.00@7.50

Sheep are unsettled with receipts very light and prices unstable but generally higher.

Prime wethers	$7.00@7.25
Good mixed	6.50@6.75
Fair mixed ewes and wethers	5.50@6.25
Culls and commons	3.00@4.50
Spring lambs	12.00@14.50
Culls to choice lambs	6.00@9.25
Clipped lambs	5.00@8.00

BUFFALO LIVE STOCK

Buffalo, N. Y., March 31, 1913.

Cattle receipts today were 3,500 head. Markets last week were very irregular because of interrupted shipping from the West. Prices held about steady, however. The market was slow today.

Choice heavy steers	$8.75@9.00
Medium	8.00@8.65
Yearlings	7.75@8.75
Plain heavy	7.75@8.00
Handy butchers	7.25@8.15
Good to choice fat cows	6.00@7.00
Good to choice heifers	7.25@8.35
Butcher bulls	6.00@7.25
Feeders	5.50@7.50
Stockers	4.75@6.40
Cows and springers	40.00@85.00

The calf market was firm all last week, but prices declined at the close. With 1,400 head on sale today there was an advance and a better trade.

Choice veals	$11.25@12.00
Light and thin	4.00@6.50

Sheep and lambs improved in price last week under lighter receipts and fair trade. With 1,000 head on sale today the market advanced somewhat.

Choice lambs	$8.50@9.00
Poorer grades	6.00@6.50
Yearlings	8.00@8.25
Wethers	6.75@7.25
Ewes	6.00@6.75
Sheep	6.50@6.75

The same irregularity which prevailed in the other markets was found in the hog market last week. Prices fluctuated within narrow limits. With 12,000 on sale today the market was active and higher.

Heavies	$9.70@9.75
Mixed and medium	9.70@9.75
Yorkers	9.75@10.00
Light Yorkers	9.75@10.00
Pigs	9.85@10.00
Roughs	8.75@8.85
Stags	7.00@8.00

BALTIMORE LIVE STOCK

Baltimore, Md., March 31, 1913.

Beef receipts for the week were 2,014 head. The market is steady.

Steers	$5.00@8.50
Heifers	5.50@7.00
Cows	3.00@5.40
Bulls	4.50@6.75
Fresh cows	27.50@77.50

Sheep and lamb receipts were 1,094 head. Under a light supply the market is slow.

Sheep	$3.75@6.75
Lambs	6.50@9.75

There were 8,847 hogs on sale during the week. Under fair supply the market is steady.

Light western	$9.90@9.95
Heavy to medium	9.50@9.90
Near by	10.25@10.30
Roughs	7.50@8.75
Pigs	9.00@9.75

Calf receipts for the week were 465 head. The market is lower under a fair supply at $4.50@11.00.

NEW YORK LIVE STOCK

New York City, March 31, 1913.

Cattle receipts for the week were 2,766 head. The market is easy.

Steers	$6.00@9.35
Bulls	5.50@8.00
Cows	3.50@6.50

Dressed beef strong. Native sides, 12@14c.

Calf receipts were 2,170 head. The market is weak.

Choice veals	$11.50@13.00
Good veals	9.00@11.50
Culls	6.00@8.50
Barnyard calves	4.00@5.50
Fed calves	7.00@9.00
Westerns	3.50@5.00

Dressed calves steady.

City dressed veals	15@18½c
Country dressed veals	12@16c

Sheep and lamb receipts were 9,091 head. Market irregular.

Sheep	$5.00@6.75
Culls	3.75@4.75
Lambs	7.75@9.50
Culls	7.00@7.50
Spring lambs	4.50@

Hog receipts were 9,018 head. The market is lower.

Light to heavy	$9.75@10.00
Roughs	8.50@8.75

ELGIN BUTTER QUOTATION

Elgin, Ill., March 31, 1913.

The quotation committee of the Elgin Board of Trade this afternoon declared butter firm at 35c a pound.

NEW YORK MILK QUOTATION

The wholesale milk price is $1.71 per 40-quart can for class C; class B, $1.81.

PITTSBURGH HAY AND GRAIN

Pittsburgh, Pa., March 31, 1913.

Owing to the recent floods in and about this region no hay, straw or grain has been received. The market is at an absolute standstill and quotations are of no value.

TOBACCO MARKET

It is stated that a Connecticut millionaire recently said that if conditions would but permit, he should engage in tobacco growing in Lancaster County, Pa. In view of present depressed market conditions, this should serve to encourage growers, especially those who hold the unsold 15 percent of crop. However, business is better among the packers which, of course, betokens a better demand for growers. Sales were widely scattered and at recent reduced prices, which are probably $2 to $4 per cwt. less than at the high time during winter. Growers are busy preparing for the new crop, which it is estimated will be about an average one.

Much interest is expressed in the burning quality of Pennsylvania tobacco. The smoker knows how unpleasant it is for his cigar to go out between puffs, and the consequent necessity of smoking by might and main to keep it in operation. To locate and correct the cause of this trouble is a matter now being considered. It is conceded that this defective quality is the result of unfavorable conditions of fertility, and reason is shown by the fact that the quality develops most prominently in dwarf, stunted plants. An authority has just stated that the three principal factors causing the defect are: (1) insufficient available plant food; (2) insufficient rain to dissolve plant food, and (3) a deficiency of humus. The same authority states that the type of soil has no bearing upon the quality in question, it being solely a matter of plant food and moisture, as mentioned above. In this connection it is interesting to note the cigars are scored by the five following points, given in order of their importance. First, burn; second, aroma; third, taste or flavor; fourth, color; and fifth, workmanship.

A recent government bulletin places the total tobacco crop for the past year at 3,000,000,000 pounds, and the product of cigars at 30,000,000,000; cigarettes, 100,000,000,000. Stupendous figures, these, especially when it is claimed that nicotine is a bane to the human race—a poison scarcely less injurious to the body than alcohol.—H. E. Tweed. March 31, 1913.

NEW BULLETINS

The Pennsylvania Experiment Station, at State College, Pa., has issued a bulletin of great interest to poultrymen. The results of experiments along feeding lines are given in detail. It has been found that pullets of Barred Rock, R. I. Reds and Leghorn breeding will keep in good health on rations carrying very large proportions of corn, if bran is also liberally supplied. Hatchability of eggs and vigor are increased by a liberal use of corn. A ration of corn, bran and meat scrap does not result in a heavy egg production when long continued. Other points of interest are also presented. The bulletin will be sent to you free if you write the above station for it.

Winter Injury to Fruit Buds.—Bulletin 91, of the Montana Experiment Station, Bozeman, Mont., discusses the important question of the winter killing of fruit buds. It says: "It has not been possible to fix any exact degree at which injury to fruit buds will occur, even in one class of fruit. The stage of development of the bud, the variety, and atmospheric conditions other than severe freezing temperatures, are factors that determine to a considerable degree the extent of the injury. In most cases, no doubt, when the tissues of the plant are frozen, the immediate effect is to draw the moisture out of the cells and freeze it as ice in the intercellular spaces, or at least outside of the cell walls. If the freeze is not too severe, or of too long duration, and if the tissues thaw under conditions not too trying, the cells may reabsorb this moisture with no apparent ill effects. If the freeze extends over a longer period, the buds may freeze dry, as will a damp cloth on a cold day. But the bud is provided with a covering of bud scales and apparently the chief functions of these is to prevent this rapid loss of moisture. This protection is generally sufficient, and in most plants we seldom hear of the dormant buds being killed unless the wood is killed as well. Fruit buds are generally more susceptible to injury than branch buds."

Canning Tomatoes.—Tomato canning can be made a profitable industry, according to Farmers' Bulletin 521, of the United States Department of Agriculture, Washington, D. C. There are many waste tomatoes, both ripe and green, in every garden, which can be profitably canned at home. This home industry is especially applicable to the boy or girl who desires to earn a little extra money during vacation time. This bulletin not only gives directions for canning at home, but it also contains many valuable recipes for preparing tomatoes, and also information for those who would form a canning club and thus conduct the work in a co-operative way. The bulletin is free to those who write the Department for it.

Farmers' Institutes.—In a government report on institute statistics, we find that Pennsylvania stands well to the front in this important branch of agricultural education. In 1911 there were 71 lecturers employed, which was more than in any other state except Illinois, which had 105. Our state appropriated $25,500 for the 1912 session which was the third largest appropriation; $35,000 in New York, and $29,650 in Illinois being first and second. The total attendance in Pennsylvania was 162,809, as against 376,185 in Ohio and 201,580 in Indiana; but when we consider that there were only 920 sessions held as against over 1,000 in four other states, the results were not unsatisfactory.

EDUCATIONAL VALUE OF AGRICULTURAL PRESS

An investigation recently made by the Office of Farm Management of the United States Department of Agriculture gives figures on the relative value of various agencies working toward the improvement of agriculture. Of practically 3,700 farmers interviewed, about 1 in every 1.5 takes a farm paper; 1 in 2.1 receives agricultural bulletins; 1 in 3.1 attends farmers' institutes; 1 in 6.5 belongs to some agricultural organization; 1 in 14.5 writes for agricultural advice; 1 in 2.5 has a few farm books. About 48 percent of those receiving bulletins put into practice some things learned from them; 54 percent of those attending institutes use suggestions learned; 79 percent of those receiving instruction from demonstrators practice the instructions given. Of about 470 farmers having access to all the named resources of information, 21 percent favor the bulletins, 14 percent favor the farmers' institutes, while 66 percent favor the farm papers as the most helpful source of information on farming. Even in the case of 62 farmers who received instruction from county agents, as well as from bulletins and farm papers, 11 percent favored the bulletins, 24 percent favored the demonstration agents and 52 percent favored the farm papers.

AN ALFALFA CAMPAIGN

Prof. P. G. Holden, of the Extension Department of the International Harvester Company, has outlined an ambitious plan for introducing alfalfa growing on every farm. The plan, in brief, is as follows: Campaign work in arousing interest in alfalfa growing is to be conducted by automobile visits to farms, carrying information on methods of growing and demonstration of value of the crop. Educational work will also be conducted thru local organizations, as the schools, institutes, etc. Local campaigns will be conducted in co-operation with farmers and business men wherever the people show interest in agricultural improvement. The work is now being organized in five different states, and it is expected to push it as rapidly as possible.

Cotton Studies.—The third annual opening of cotton samples, first stored in vacuum by the Department of Agriculture in 1910, showed no appreciable change in the cotton. This result confirms the previous tests and renders it very certain that storage of standard types of cotton in vacuum tubes is a practical solution of the question of the permanency of such standards.

Cream Separator Facts.—The new Maynard cream separator is handsomely illustrated and fully described in the new catalog issued by The Charles William Stores, Inc., Dept. A-15, 50 Pine St., New York City. This rather new separator is setting new standards in separator efficiency. It is sold on a liberal 60-day trial offer at prices that should appeal to all. Some of its claims to superiority are easy running, easy washing, close skimming, smooth, velvety cream, cheap operation and adaptability in size and capacity. A postal card addressed to the above company will bring a copy of the catalog free.

CROP REPORT

The Crop Reporting Board of the United States Department of Agriculture reported on crop conditions March 1 as follows. Amount of 1912 crop still in farmer's hands: Wheat, 156,483,000 bushels, or 21.4 percent, as compared with 122,025,000 bu., or 19.6 percent, a year ago; corn, 1,289,655,000 bu., or 41.3 percent, against 884,069,000 bu., or 34.9 percent, in 1912; oats, 604,216,000 bu., or 42.6 percent, as compared with 289,988,000 bu., or 31.4 percent, a year ago; and barley, 62,283,000 bu., or 27.8 percent, as compared with 24,760,000 bu., or 15.5 percent, last year.

NEW BOOKS

Horse, Truck and Tractor—By Herbert N. Casson, L. W. Ellis and Rollin W. Hutchinson, Jr. Bound in cloth, 6x9 inches. 200 pages. Illustrated. Published by F. G. Browne & Co., Chicago. Price, $1.25 net.

This book is a striking analysis and intensely interesting discussion of the field of adaptation of motor power to the various lines of work formerly done by the horse. It discusses the so-called waste and costliness of horse power and gives data to show the economic importance of substituting motive power for horse power on farms as well as in the cities. What may be termed the major premise of the discussion is the statement that "the horse has become unprofitable; he is too costly to buy and too costly to keep." This is substantiated by figures showing that the 25,000,000 horses and mules in this country consumed food last year to the value of $2,000,000,000, or as much as the total operating cost of all the 250,000 miles of railroad in the country. The remedy is suggested in the statement that a single tractor may be assumed to be as powerful as 25 horses, as enduring as 100 horses, and about as expensive as 10 horses. The book has chapters on horse cost of living, motor trucks, motorized commerce, efficiency of motor transportation, analysis of expenses of motor truck and horse equipment, traction, power plowing, tractors on fruit farms, the future of the tractors, etc. This is not a book of theories, but rather a presentation of the latest and most practical data on horse and motor power. While its condemnation of horse power under present conditions may seem a bit revolutionary, the discussion may be taken as a reliable index of the power world of a no distant future. The discussion is snappy and full of interest, and we predict a spirited reception of the book by horse owners as well as tractor and motor men.

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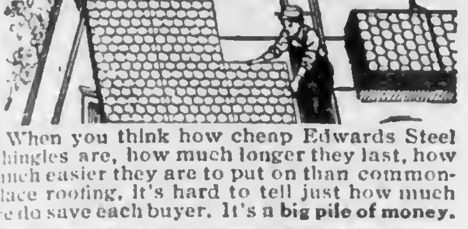

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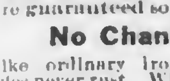

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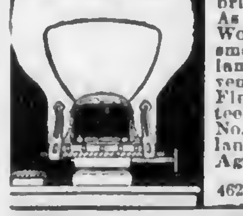

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Best Open-Hearth Crimped Steel Wire Fencing for cattle, 18½c per rod; for hogs, 19¼c.

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Heavy 5-prong Hand Cultivator—prongs made of the best spring steel—78c each.

Buffalo King Hand Sprayer with suction pipe strainer, large churn-dash agitator, 10-foot lead of hose and improved brass nozzle, $7.25.

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High-grade outside Spar Varnish, for use where an A-No. 1 varnish is required, $2.25 per gallon.

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Nickel-plated Alarm Clock, 6½ in. high by 4½ in. wide, 75c.

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Seasoned selected oak Chiffonier, finished in gloss golden oak, 3 large drawers, genuine French beveled mirror 12x20 in., weight 105 lbs., our price $5.25. Only 45 left.

350 seamless Tapestry Rugs, one piece, guaranteed finest quality, 6x9 ft., $5.75; 9x12 ft., $11.25.

Buffalo Sanitary all-steel Bed Couches, with non-sagging, non-rustable link fabric spring, guaranteed 35 years, only $3.45.

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(LARGEST SEED CORN GROWERS IN THE WORLD)

The Daughter of David Kerr

By HARRY KING TOOTLE.

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PRECEDING CHAPTERS

Gloria Kerr, after being away from her old home at Belmont since she was a little girl, the time being spent principally in travel, surprised her father, David Kerr, by returning home unannounced. She believes that her father was a wealthy real estate merchant, and she was determined to stay in Belmont and take her place at the head of Belmont society and help build up the old family home at Locust Lawn. Judge Gilbert, one of Kerr's political lieutenants, has been discussing a franchise wanted by Mr. Kendall, the representative of a Chicago packing company.

CHAPTER II (Concluded)

The Judge listened to Kendall's reminder of Kerr's political power.

“Yes, yes, I know,” Gilbert admitted hastily. Then with a sigh of relief, “That's all past.”

He ran his hand thru his hair, gray long before the frost of age could come to silver it, and was thankful that such episodes were things of the past. He was weary of it all. Kendall's next remark, delivered with the chill incisiveness of a lawyer cross-examining a belligerent witness, brought him once more to the defense of the man who had made his success possible.

“Is Dave Kerr keeping out of the deal only thru fear of young Wright and the Belmont News?”

“He isn't afraid of anything. Mr. Kerr merely says that it does'nt interest him at the present time. As for me, I'm out of it.”

“You're still Kerr's right hand adviser.”

“Pardon me, his legal adviser.”

Kendall did not pause to acknowledge the distinction, but went on, this time straight to the heart of the matter.

“I made what the stock yards people consider a good offer. If that isn't enough, what's his price?”

“You'd have the whole town up in arms,” remonstrated Gilbert.

“They've been up in arms before. Once they brought ropes to hang the council, but Kerr put thru the waterworks deal. You're the attorney for the street railway company; you know what he did there.”

This point-blank question irritated Gilbert. He much preferred to call a spade an agricultural implement, even when talking with those who stood close to him in his manipulations for the various corporations he represented. He therefore ignored the question, preferring to tell why the matter could not be taken up at present.

“The election's coming on in a couple of months, and your franchise would be made an issue. We can't afford it with the News in a position to boost the Republican party.”

“I've got to get it thru as soon as possible. There's nothing raw in this franchise, is there?”

“That's the Chicago point of view,” answered Kendall. “Stripped of legal verbiage, what you want is to lay railroad tracks, on which will run cattle trains, down a pretty residence street and use a park for terminals, all without giving property owners or the city adequate compensation for ruining or confiscating their property. I call that pretty raw.”

“Well, it's our best and certainly our cheapest way if Kerr will put thru a franchise for us,” Kendall maintained stubbornly. “I'll come back next week, and take the matter up again. In the meantime you can talk it over thoroly with Kerr. He may have something to say by that time.”

“It hardly seems likely. He seldom changes his mind.”

“He may this time. I've got to get away now and go by the hotel before I go to the train. Let's go back to the drawing-room, where I can have a few more words with Wright. We may be able to win him over.”

“That's what I'm going to try to do,” replied Judge Gilbert as they rose to join Mrs. Gilbert and her guests.

The attorney entered the drawing-room to find a discussion regarding newspapers just drawing to a close with victory still uncertain on which standard to perch.

“You just missed hearing Dr. Hayes pay his respects to newspapers, Judge Gilbert,” said Joe Wright with a smile. The layman's opinions always interest and usually amuse a journalist.

“What's the matter? Have you told him you won't publish the box scores of the ball games this year?”

“I'll do that for him, and gladly.”

“Then there's no occasion to kick. That's the only thing that can trouble a fat man.”

“This time I was speaking generally,” explained Hayes. “I don't like some of the ways reporters have.”

“That's only a small part of the business,” laughed Wright. “If you complain only about that I shall have you for a staunch adherent.”

Mrs. Hayes saw that Kendall was at a loss to understand the drift of the conversation, and accordingly said, “Dr. Hayes is coroner, Mr. Kendall, and the Banner man calls us up at most unearthly hours.”

The Belmont Banner was the morning paper, and its editor, Deacon Jerry Withrow, was always at the beck and call of the boss. Kerr let him think that he had something to do with directing the affairs of the city. This was a harmless delusion, since his pliant attitude always made him consider a suggestion let fall by the boss as a scheme which he himself had hatched.

“I think it is dreadful for nice men to be mixed up in politics,” said Mrs. Gilbert.

Perhaps it was no more dreadful than was the lack of knowledge of politics displayed by the nice women of Belmont. This would have been difficult to impress upon Mrs. Gilbert. She knew well enough that her husband was consulted by that odious David Kerr, but that was in a legal way and Kerr paid well for the advice he received. Even the tone in which she spoke showed how thankful she was her husband was not in politics. Mrs. Hayes was quick to say what she thought along the same lines by adding:

“And Dr. Hayes doesn't have to at all, you know. He says he does it for the good of the party.”

The coroner looked at his pretty young wife and remarked in mock-disgust:

“What my wife doesn't know about politics would elect Bryan President.”

This would have been all very interesting to Kendall if he had had the entire evening to spend in such pleasant company. Time was pressing, however, and in the few minutes still at his disposal he wished to sound Wright at greater length about the Belmont News.

Kendall looked closely at the young man whom he had already set down as an opponent. Physically Wright seemed no shirker of a combat. His shoulders were broad and his body well developed. Led to believe from his knowledge of the reformer type that he would find Joe Wright a long-haired theorist and Utopian dreamer, the lawyer found instead a self-possessed, well-balanced young man. The newspaper owner's manner, even in repose, was judicial. To Kendall's thinking he had the air of a man who would not be swayed by prejudice or liking. It was his part, however, as a special pleader, to make Wright think himself too much an idealist—if he could—in opposing the just claims of the stockyard company.

“I suppose you found the News somewhat run down when you took hold of it,” Kendall remarked casually.

“Yes, the name was about all I bought.”

“I thought the paper had a pretty good mechanical plant,” interjected Gilbert.

Instinctively Wright felt the concerted action masked under the innocent question and the remark by Gilbert. Just what Kendall had to gain he did not know, but since he recognized him as a representative of large interests he thought best to let him know what stand the News might be expected to take. It was just as well that Gilbert should have it clearly in mind also. If the clients of these men were playing the game fair and square they would welcome his kind of newspaper. If they weren't, and Wright knew there had been lapses from grace on the parts of some of them, he hoped they would recognize in the paper the power which would first seek to prevent, and, failing in this, then try to correct. Judge Gilbert's allusion to the good mechanical plant he seized upon for a text.

“That's true, the News has a good mechanical plant.” He paused to let that sink in before he continued. “Somehow or other when I think of a newspaper I never think of that side of it. I have in mind only the feeling of confidence with which a newspaper inspires its readers.”

“What do you think the ideal newspaper is like?” asked Judge Gilbert. He wanted to know to what kind of star this young man hitched his wagon.

“The ideal newspaper is one which has no ax to grind, and no personal animus in the discussion of private affairs or public questions, but only a constant regard for the truth and the lasting welfare of the state.”

Kendall went to what he considered the heart of the matter.

“Aren't you leaving out of consideration, Mr. Wright, that everything—this government, even—is but a compromise?”

“No, I recognize that, and I believe in compromise. Without it we would still be cave dwellers. It is exactly because of this ever-present compromise that an honest newspaper is so valuable. It must see to it that this compromise is open and above board. It mustn't be the give-and-take trade of low politicians in the back room of a saloon or the far more dangerous trades of men higher up and powerful interests; not that kind of compromise, which after all is a sale of something one does not legally own to one who cannot or will not secure it honestly. I tell you that the majority must rule fairly and with a proper deference for the rights of the minority, that's where a newspaper can be of service.”

Having decided to deliver a broadside, Wright had gone about it with great enthusiasm. The sight of Mrs. Hayes gazing wonderingly at him, for she did not understand what he meant, caused the editor to break off with a laugh. He recognized that Judge Gilbert's drawing-room was not the proper place for a lengthy exposition of his views.

“I'm afraid I'm preaching,” he apologized, “and there's nothing I hate more than that.”

“Not at all,” protested Kendall. “Your views interest me greatly, Mr. Wright. When I come again I am going to see how far along you are on the road to the ideal.”

With this Kendall announced that he must be going, and made his adieux. To have a few last words about Wright, Judge Gilbert accompanied the visiting attorney even to the front gate. His very last assertion was that he himself would have nothing to do with the proposed franchise grab and that he was morally certain David Kerr was of the same frame of mind.

CHAPTER III

As Judge Gilbert was about to enter his front door, having accompanied Mr. Kendall as far as the gate, he saw a carriage stop in front of the house. The man who got out and came up the walk he recognized instantly. None the less he did not walk like the David Kerr of yesterday; he seemed in every motion as he came into the light cast by the porch lamp to be the David Kerr of ten years hence. Realizing that only something unusual could bring the master of Locust Lawn out at night, and to his house, too, the lawyer went down the porch steps to meet his visitor.

“Good evening, Mr. Kerr,” was Gilbert's greeting. “This is an unexpected pleasure.”

“Evening, Amos. Can I see you alone? I don't want to be interrupted.”

“We can go into the library. No one will disturb us there.”

To this Kerr made no reply. He toiled heavily up the steps and into the house. Gilbert's surprise increased on finding, when his visitor removed his overcoat, that he had on evening clothes. It was more an intuitive feeling than observation which made Gilbert understand how uncomfortable the boss found his unaccustomed raiment.

As Kerr walked thru the hall and into the library, his own thoughts did not weigh so heavily upon him as to prevent him from satisfying his curiosity by gazing about him. It was the first time in his life that he had ever set foot in Gilbert's house. The invitation had been extended many times, but Kerr knew his social limitations and had always refused.

The judge pushed forward a big leather chair and into it Kerr dropped without a word. His hands rested listlessly on the arms of his chair, the bosom of his shirt was rumpled and bulged out of his waistcoat, his breath came heavy and fast, and he gazed dully at the fire in the grate. Gilbert had never seen him in such a condition before. Until now he had always been the man of iron, accepting his many triumphs and his few minor defeats in the same imperturbable manner.

“I tried to get you by telephone several times today,” Gilbert began.

“I know it, but I wasn't in the mood for nothin'.” The very tone in which he spoke betrayed that fact.

“I promised Kendall I'd call you up in regard to the new franchise he's anxious for you to support.”

“That'll keep.”

“I told him that personally I could not be interested.”

This drew no answer from the boss. Gilbert made no further attempt at making conversation and for a time the two men sat in silence. When Kerr launched his first question it seemed apropos of nothing.

“How long you been in Belmont, Amos?”

Gilbert's brain went thru a series of rapid thought transitions in an effort to divine whither the question led. He was accustomed to Kerr's interrogatory methods, but everything was so out of the ordinary this evening that he tried his best to fathom the boss's purpose, before, in his usual indirect fashion, he disclosed the object of his visit. The question was one easily answered, albeit with some surprise.

“Why, a little more than twenty years.”

Kerr continued to gaze into the fire, seemingly oblivious to his surroundings. Gilbert could not have sworn that the boss had heard him reply. Then came another question, still seemingly apropos of nothing.

“Remember your first office—after you quit keeping it in the top of your hat?”

“Yes, very well. I paid you two dollars a week for desk room in a corner of your real estate office—in that same old office you still have on Fifth Street.”

“That's what I charged you—but I don't guess you've got a receipt for every week. Was it you or Bill Stoner in them days used to use my big atlas for a ironin' board?”

“Both of us, I believe.”

Kerr moved restlessly in his chair, then went on.

“Many's the time I've opened that book to show a man the plat of an addition and out would drop your other handkerchief. I guess the mirror in your room wasn't big enough to hold a handkerchief on your wash day.” He looked about the library, absorbing its quiet elegance. “Things mighty different now, ain't they?”

“Then I was struggling to get a start.”

It seemed to be a monologue Kerr was delivering. His questions were answered, but he made no sign that he heard. His remarks were delivered at random and he never took his gaze from the fire, except the one time he had looked about the room to note the contrast of the present with the time when Gilbert had first come to Belmont.

“ 'Bout that time you wanted to git married to a mighty nice girl.”

“Yes, that was about the time I was elected prosecuting attorney.”

“Exactly,” then after a pause, “and you got married.”

Gilbert could not understand the drift of the conversation, but he recognized that Kerr was reviewing the past step by step.

“Then I gave up my desk in your office, and moved to the courthouse.”

“But you still came to see me, Amos.”

This was said as quietly as had been his previous remarks. Taken by itself it was a harmless utterance, but in connection with what had gone before it was of great significance. Yes, Amos Gilbert, the rising young prosecuting attorney, had gone to see David Kerr after he had moved his office to the courthouse. The boss let that remark sink in well before he asked:

“After that how long was you on the bench?”

“Six years.”

“Is that so! I hadn't an idea it was that long. What made you give that up?”

“I had a family on my hands and needed more money. I didn't run again, you remember, because I wanted to be attorney for the new street railway company.”

Kerr seemed to be revolving something in his mind, for it was some time before he reminded Gilbert of a step

in his rise which he had not mentioned.

“I thought you was lawyer for one of them crowds that was fightin' for a franchise.”

“Well, we got the franchise.”

That was what Kerr wanted to bring out.

“Exactly. And you're still their lawyer.”

“Yes.”

“And for the water company,” mused Kerr. “And for the 'lectric light company. And you still come to see me, Amos.”

“Why, yes, Mr. Kerr, I'm not unmindful of——”

Kerr seemed to throw off some of the gloom in which he had appeared to be wrapped as he interrupted the attorney.

“This time, Amos, I've come to see you. It's the first time I've ever been in this house.”

“Well—Mr. Kerr—I—,” stammered Gilbert.

The boss pulled himself together in his chair, sat up straight and looked at Gilbert.

“But you've got a telephone.” Then he added in a gentler tone: “That's all right, Amos, I've always understood.” It seemed to be with an effort that he continued. “I'm going to tell you some things that you know, and some things that you don't know, and some you've guessed, and some I've thought nobody'd ever have to know. 'Bout the time you come here I was married, and my wife died on giving birth to a girl.”

“Gloria.”

“Yes, Gloria. I was just gittin' into politics. Things might 'ave been different if my wife had lived. It didn't seem long before there I was with a big girl on my hands—me, David Kerr.” The old feeling of power surged thru him as he added with spirit, “If it had been a boy!”

This thought held him silent for a minute, and when he took up the thread of his story again it was the old weary tone.

“Well, it wasn't. There I was with a girl on my hands. Her mother didn't have any relatives. Her father was a minister, same's my father was. I didn't have anybody, either, I could send her to. I kept her as long as I could, but by that time my house—even in the country—warn't a fit place for a child—specially a girl. So I sent her away to school and she ain't been back since. I reckon Belmont forgot about her. I gave her plenty of money, but she never knew anything of my—transactions. She thinks I made it all in real estate.”

“Then she doesn't know——”

“That's the hell of it—she don't.”

Kerr could sit still no longer. He pulled himself out of his chair and stood with his back to the fire and directly facing Gilbert. “All these years I've acted a lie. I've made Gloria believe I'm the leading man in Belmont. I am—but not in the way she thinks. It wasn't because I loved her; I can't say I do, 'cause I don't know her well. I ain't been East to see her for a couple of years. It was pride made me tell her that; that's what it was, pride. I wanted my girl to have what I'd missed. I didn't want her to know.”

He lapsed into silence, which he finally broke himself with the explanatory remark:

“Gloria thinks I'm the social leader of Belmont; that the whole town hangs breathless on what I say shall be the fashion at pink teas.”

“Hasn't she often wanted to come back?”

Kerr was not to be hurried. He began to pace up and down in front of the fireplace. When he paused, the lawyer, to secure a continuation of the story, said:

“Well?”

“This morning she came home.”

Now Judge Gilbert understood; yet he could scarcely believe it possible.

“What! Gloria here!”

“Yes, here” echoed Kerr. “Come home, that's what she calls it. She's been visiting school friends since she came back from Japan, and had just started to California when the party fell thru when they'd got to St. Louis. So she jumped on the train and came to Belmont unannounced—to surprise me.”

(To be continued.)

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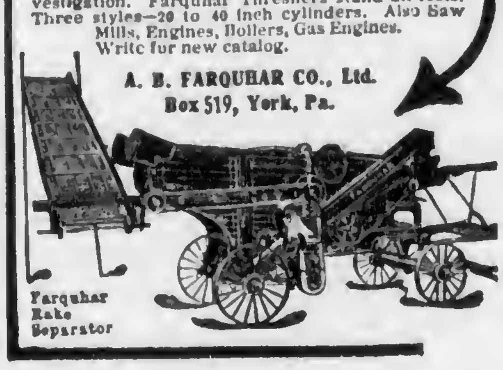

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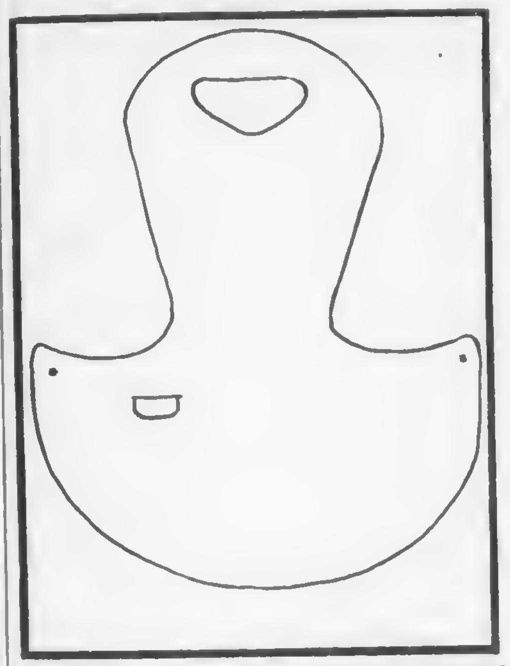

SIMPLE PATTERN FOR OILCLOTH APRON

SPRING LAUNDRY DAY

By Hilda Richmond

Before spring work begins in dead earnest, and before the warm, tiresome days come, I find it a good plan to set aside a day or two to put the summer clothes in good order. The things that were laid away last fall with the starch washed out, and the ones that were not soiled enough to wash then, but which the winter has helped to soil, and all the other summer things are routed out and put to swing on the clothes line, well blued and starched. If they have turned yellow, the fine sunshine and winds will bleach them beautifully, and they have only to be dipped several times in blue water and hung on the line to restore them to their former whiteness.

As fast as possible after all are washed, bleached and dried, they are carefully ironed. I do not believe in doing all the ironing in one day unless it is a small one, for two important reasons. In the first place, it is not necessary to tire one's self out with a big ironing, and in the second place, better work will be done if it is taken moderately. Everyone knows that white garments ironed perfectly smooth and dry stay clean much longer than those hurried over, and they certainly look better. Every particle of moisture should be ironed out, and particular attention paid to tucks, sleeves, folds and hems. A wrinkled place on an otherwise pretty garment is sure to be noticed.

Next comes the putting away, which is of equal importance. Having a limited amount of closet room, I use a home-made skirt box for the dresses and shirt waists, laying them out straight and smooth. What garments can hang in the closets are fastened on cloak hangers, and are protected from dust with an old sheet. The petticoats, corset covers, combinations and gowns are folded and laid away in drawers. For common use the thin old outing flannels will be used all thru the cool spring days and nights, but it is a comfort to know when extra work comes and when rushing duties fill the days to overflowing that the summer garments are all ready for use and that they are so well done that they will last a long time. If a hot day comes, they are ready for use, and if they must wait until late May or June there is no harm done in getting them ready early. Spring laundry day is a fixed institution in our house and it brings great satisfaction to all of us.

A SIGN AT YOUR GATE

Have you lilac bushes that will soon be wearing their beautiful lavender plumes? Have you cheery jonquils, dainty narcissus, stately peonies and other spring flowers in profusion? If so, put a sign on your gate and sell some. Perhaps you have no gate, but you surely have an entrance which leads finally to your home. Many of you farmers' wives and daughters who live right on a road which is frequented by autoists have a fine chance to sell flowers, buttermilk, eggs, butter and even apple butter and jellies. So many things, fresh and alluring, can be sold directly from the producer to the consumer.

Perhaps this would not have occurred to me had not a neighbor said that one day a touring car was stopped in front of her lawn; a young man came to her on the porch and begged to buy some of her purple lilacs. She gladly gave him an armful, for her bushes were many and laden with blooms, and money she did not need. Some of us are not so fortunate in this respect. This word from my neighbor put me in a thinking mood. "Put a sign on your gate," thought I, "and bring buyers in." A neat sign was made when the jonquils and narcissus were blooming at their best. The people riding by came in and bought from us. When my 200 peony plants bloomed, a florist taking a ride thru the country saw the sign, looked at the peony bed and bought all the blooms and buds that could be cut. So much for the sign!

Last summer a wealthy woman of Baltimore said something to her husband about ordering peaches for canning. He told her that they could get fine peaches in the country when they took their auto trip to Harper's Ferry the next week. The ride was taken thru the Valley of Virginia, by Frederick, Md., and finally on to Baltimore, having passed over some four or five hundred miles, but never seeing a sign, "Peaches for Sale." Now, part of the country they had ridden over is a great peach growing section. Even if you are shipping quantities, would you not be glad to sell small lots of produce at top prices? If they choose, they could drive into various farms and inquire for the article wanted, but one does not like to follow such will-o-the-wisp. The peach growers of this section lost the chance of a sale thru lack of this cheap advertising. So much for the lack of a sign board!

In our neighborhood a man's sign has brought him all the customers he can supply with cabbage and tomato plants. A citizen of southern Maryland told us that the greater part of his living was made by raising pigs for sale, but sometimes he had an abundance of these animals above demand for them. His wife, wise woman, made a sign and placed it at the gate and it has helped dispose of surplus stock. Last year $1,100 worth of pigs were sold. This is a true story. Farmers' wives must use their wits as well as their physical strength to help their husbands. Sometimes when they do a particularly bright thing, they must be so tactful that the good man will think that he thought of it first. Let him have the glory; it tends to make him placid and good natured. When you make your sign have it neat and correctly spelled; if you can not print well, have it done by someone who can.—A Farmer's Wife, Maryland.

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Weakness—Sharp, Uneven Teeth.—I have a mare 13 years old, that eats hay fairly well, but does not seem to chew her grain right. She has fairly good life, but appears to tire easily when doing light work. She breathes too fast, but is free from heaves. J. M., Dale, N. Y.—First of all, you had better have her grinder teeth floated, filing off sharp edges of outside of upper rows and inside of lower; avoid narrowing the teeth too much. Give her 1 dr. ground nux vomica, ½ oz. ground gentian, and 2 dr. ground fenugreek at a dose, 3 times a day. She should be fed some roots and all the grain she will eat.

Acidity of Stomach.—I have some young cattle that are inclined to eat wood; I feed them hay, corn fodder, bran and corn chop; I also salt them once a day. W. A. L., Liverpool, Pa.—Give each animal 1 oz. bicarbonate soda, 1 oz. ground gentian and 1 oz. salt at a dose in feed, 2 or 3 times a day. A change of food with roots added will help them.

Navel Infection—Enlarged Hock.—I have a colt, 2 years old, which had a suppurative navel for some time after birth. Soon after this navel trouble the outside of hock joint enlarged and has remained so ever since. I would like to have you prescribe a remedy that will reduce and remove this bunch. J. E. S., Green Castle, Pa.—Clip off hair and apply 1 part iodine and 10 parts lard to bunch, 2 or 3 times a week. Kindly understand an enlargement of this kind is difficult to remove.

Chronic Cough.—I have a young cow that is apparently healthy, but is troubled with a cough. She has a good appetite, is well fed, but remains thin. C. V. P., Grand Valley, Pa.—Give your cow 1 dr. powdered opium, 2 dr. muriate ammonia and 1 dr. powdered lobelia at a dose in feed, 2 or 3 times a day. Apply equal parts turpentine, aqua ammonia and raw linseed oil to throat, 2 or 3 times a week.

Sprained Fetlock Joint.—I have a mare, 8 years old, that went lame suddenly some 4 weeks ago. I have applied mild home remedies, also light blister and she is just beginning to show improvement. What can I do to strengthen her and put her in shape for spring work? E. G., Chalfont, Pa.—Clip hair off fetlock joint and apply 1 part powdered cantharides and 8 parts lard to fetlock joint, all the way round, once a week, and she will soon be able to work. She should have absolute rest until she walks sound.

Spavin.—I am told that my horse has a spavin. It causes him to go lame when he first leaves stable, or when he has stood still for a few minutes. The lameness came on gradually, and has not changed much for the last 4 weeks. A. J. K., Meadville, Pa.—If you are sure the lameness is in hock, apply 1 part red iodide mercury and 8 parts lard to inner and fore part of hock, once a week. He should be kept quiet until he recovers.

Cracked Heels.—I have a 4-year-old colt that has scratches, causing him to limp some when he first moves. He seems to gradually warm out of his lameness. I am sure he has scratches. A. J. M., Newcastle, Pa.—Clip hair off and apply the following lotion to leg, twice a day: Dissolve ¼ lb. acetate of lead, ¼ lb. sulfate zinc and 3 oz. carbolic acid in 1 gallon water. Give him a dessertspoonful of Donovan's solution at a dose in feed or water, 3 times a day. Feed him some roots.

Clipping Horses.—I wish you would give me your views regarding the clipping of farm horses, and say whether you advise me to clip my long-coated work horses or not. F. E. R., Oil City, Pa.—When I carried on my stock farm I clipped my four pair of horses every year for 11 years, and they were greatly benefited by it. I have also advised thousands of my clients to do the same, and for 25 years I have kept a power clipper at my veterinary hospital in the city and clipped several hundred horses each year, and am sure it helped the horses to have their long, rough coats taken off. Horses thrive and hold their flesh better on account of not perspiring too much. I strongly advise you clip your work horses every spring.

COUNTY NOTES

Juniata Co., Pa. (C.), Mar. 24—Warm and dry for March. Stock in good condition. Wheat and grass in good condition. Wheat, $1; oats, 40c; corn, 70c; potatoes, 75c; hay, $15 per ton; horses, $150 to $250; cows, $50 to $75; hogs, 8c to 10c lb.; butter, 40c; eggs, 17c. Hauling manure and winter work well done. No plowing yet. Health of man and beast good. Farmers prosperous. Labor scarce.—D. B. Esh.

Bradford Co., Pa. (N. E.), Mar. 22.—Warm and showery. Feed of all kinds is cheap, and in spite of that butter and live stock keep up the highest in years. Veals, 10c; hogs, 9c, live. Spring has come in earnest, and we are just waiting for the fields to settle for the annual plunge.—L. C. Burroughs.

Fayette Co., Pa. (S. W.), Mar. 23.—The last week has given fine weather. Little live stock for sale. Farmers want stock cattle, but say they can't get them nearer than the city market. Cows, $40@100; Horses, scarce, $150@300. No colts for sale and but few in county. Conditions fine for plowing, and farmers are at it early and late. Quite a lot of plowing already done. Some have made garden. Everybody rushing spring work. Spraying is being done by many.—S. [illegible] Harris.

Centre Co., Pa. (C.), Mar. 19.—Weather spring like. Some farmers plowing, but most are busy attending public sales. Stock of all kinds selling at top-notch prices. Horses, $[illegible]; cows, $100. Stock hogs out of sight and so are beef cattle. At least $500,000 worth of stock will be hammered down at public sales in this county, as high as three a day. Eggs, 18c; butter, 35@42c; chicks, [illegible] lb. Winter wheat came out of winter in excellent condition; prospects good for a bumper crop.—W. H. Fry.

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Registered Pharmacist
Graduate of the National Institute of Pharmacy

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I'll drive out the blood-sucking, life-sapping, disease-breeding parasites which multiply in the stomach and intestines, killing off your hogs and sheep, starving your horses and cattle, and stealing your feed and profits. I'll send you enough Sal-Vet to last all your stock 60 days. Simply put it where all your farm animals can run to it freely. **They will doctor themselves.** Don't send any money—just the coupon. Fill it out and mail today.

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President.

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Sal-Vet is a wonder-working medicated salt which completely rids farm animals of their greatest enemies—the stomach and free intestinal worms. These deadly pests are the cause of 90% of all live-stock diseases. They keep farm stock in a poor, weakened, money-losing condition—they are the first step to hog cholera, swine plague, horse plague and other contagious diseases.

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THEY DOCTOR THEMSELVES!

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All I ask you to do is to fill out the coupon, tell me how many head of stock you have, and mail it to me today. I'll ship you enough Sal-Vet to last all your stock 60 days. You simply pay the freight charges when it arrives and at the end of 60 days report results. If Sal-Vet does not do what I claim you won't owe me a penny. Send the coupon NOW. Address

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Ship me enough Sal-Vet to last my stock 60 days. I will pay the freight charges when it arrives, report results in 60 days and will then pay for it if it does what you claim. If it does not, you are to cancel the charge.

Name...

P. O...

Shipping Sta.............................State...............

Number of Sheep...............Hogs..........Cattle........Horses...........

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"As the hog cholera is prevalent all through this section, I have been feeding Sal-Vet to my hogs. Since then, I never saw them in better condition in spite of the fact that all around me the cholera is carrying them off by the hundreds."—W. J. BROOKS, Diggs, Va.

Sal-Vet will do all you claim for it. My pure-bred Berkshire hogs are doing fine, and have appetites so keen that they never seem to get enough to eat. Before I began to feed Sal-Vet the same animals were dull, listless and without appetite. They take to the Sal-Vet keenly. Hogs all over our county are dying in large numbers, and many right here in my own town have lost hogs from some cause, but I could not wish mine to do better than they have done since feeding Sal-Vet.—D. E. KNIGHT, Honea Path, S. C.

"Cholera attacked my neighbor's hogs, and one of them died. He started to feed Sal-Vet and has not lost any since. I have been feeding Sal-Vet and have not had a sick hog on the place."—J. J. G. FERRELL, Vandoro, Ala.

"A lot of hogs died in this county from swine plague or cholera. Some of them were within three miles of me, but I have been feeding Sal-Vet, and have not lost a single hog. They are all doing well, eat all I give them and have good appetite for more."—D. A. ROSS, Kingman, Kans. Breeder of Pure Bred Poland Chinas.

"Sal-Vet has been of great service to us; it has kept our hogs and pigs free from worms and, in addition, proved to be a splendid tonic."—J. B. ESPY, Agriculturist, Southeast Alabama Experiment Station, Abbeville, Ala.

"For their own good, I would recommend Sal-Vet to all sheep men. It will destroy every stomach worm in the flock and keep your sheep and lambs free from them and at the same time keep the flock in the pink of condition and health."—ROBERT S. BLASTOCK, Mgr. Sheep Dept., Walnut Hall Stock Farm, Donerail, Ky.

PRICES 40 lbs., $2.25; 100 lbs., $5.00; 200 lbs., $9.00; 300 lbs., $13.00; 500 lbs., $21.12. No orders filled for less than 40 lbs. Never sold in bulk, only in Trade Marked Sal-Vet packages.

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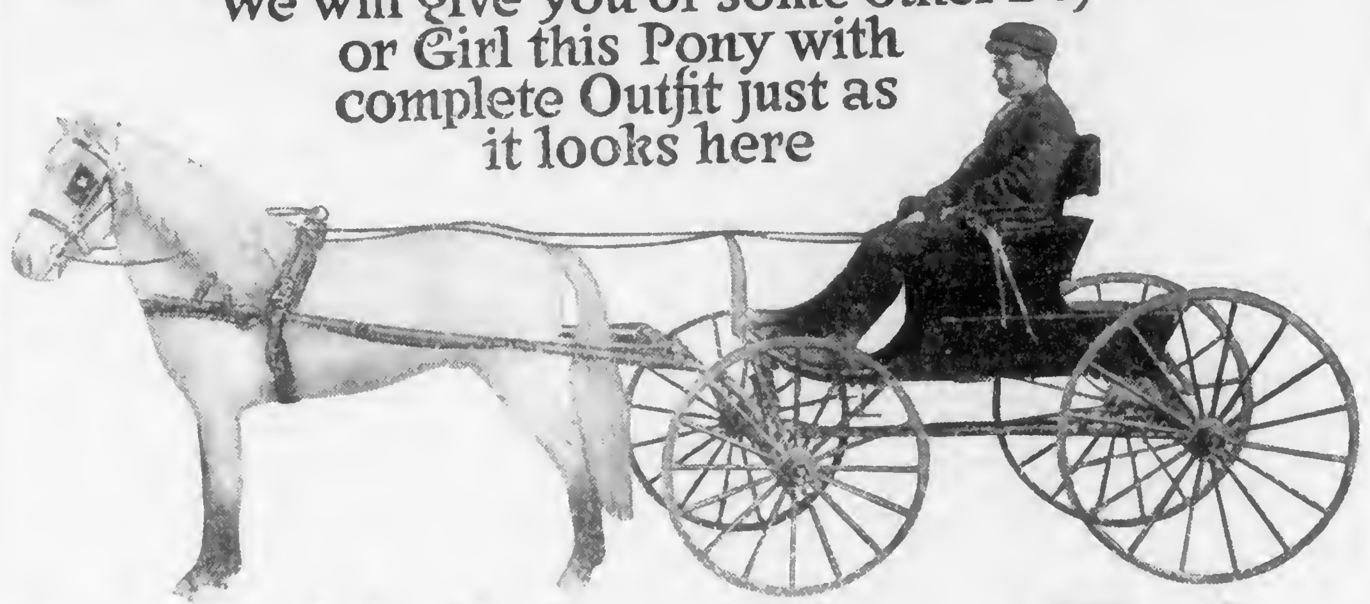
To Some Lucky Boy or Girl

"SULTAN"

"Sultan" is a beautiful cream colored pony with black points, about 40 inches tall and weighs close to 300 pounds. You seldom see a pony like him except in a circus or a pony show; in fact we were lucky to get a pony like **"Sultan."** We selected him from over 100 ponies at the famous Heyl Pony Farm at Washington, Ill. and we think he is undoubtedly the finest pony of all the 85 we have given away. You would be the happiest child in the United States if you were the proud owner of **"Sultan."** Just think of the fine times you could have taking your boy and girl friends out riding in his nobby pony wagon and when you did not wish to drive him you could go for a horseback ride early in the morning. But best of all **"Sultan"** is as kind and gentle as a kitten and dearly loves children. You can teach him all kinds of cute tricks, such as, to come when you whistle, stand with his front feet on a chair and many others. Didn't you ever notice what dandy times children have who own ponies and how pretty these cute little fellows look when trotting up the road? Everybody runs to the door and stops to look at a Shetland pony going by. If you think you would like to own **"Sultan,"** read the rest of this page carefully and then send us your name so we can tell you how you may get him.

We will give you or some other Boy or Girl this Pony with complete Outfit just as it looks here



THE OUTFIT

And best of all we send free with **"Sultan"** the complete Pony Outfit just as you see it in the picture. Besides the Pony, the Pony Buggy and the Harness shown we send a Saddle and Bridle, which would make you the most complete outfit that money could buy. You could ride horse-back or take all your boy or girl friends driving everywhere. The Pony Wagon is just the most comfortable riding and easiest pulling we could buy for our purpose. We have given away so many that we know exactly what kind most boys and girls like. The handsome nickel trimmed harness looks just fine and the riding bridle is imported and the saddle which we also send we had made to order for **"Sultan."** No child, no matter how rich his parents may be, owns a nobbler or more desirable pony and outfit than this one which we shall send free with all freight and express charges paid. Read down below what some of our pony winners say about their ponies and outfits—how proud and happy they are—and see if it doesn't make you want one, too. This is surely the best chance you ever had to get a Shetland Pony, so if you haven't any and think you would like to have us give you **"Sultan,"** send your name and address to us right now so it will get to us quickly.

Send Us Your Name Today

If You Want to Own "Sultan"

As soon as we hear from you we will tell you how to become a contestant for "SULTAN." Notice we print the names and pictures of 6 of our 85 Lucky Pony Winners, which shows that we really do give away Live Shetland Ponies. Furthermore we will give you the names and addresses of any of our 85 Lucky Pony Winners that you ask for. The Webb Publishing Company publishes The Farmer's Wife and The Farmer. The banker or postmaster in your town knows we are one of the largest publishing houses in the United States, established for 30 years, so we can well afford to give Ponies to boys and girls to advertise our papers. And right here we want to tell you that we have a BIG SURPRISE for you that will DOUBLE YOUR CHANCES of winning a pony. We haven't room to explain it here, but we will tell you AS SOON AS WE HEAR FROM YOU. Remember, you can't win "SULTAN" till you send us your name, so sit down and write us at once. Don't miss this splendid chance to get a beautiful Shetland Pony.

"Roine," Clarence Busick, Adams Co., Indiana.

"I live seven miles from Decatur, Ind. I won a pony in The Farmer's Wife Contest. My pony's name is 'Roine.' When I go to the gate and whistle 'Roine' will come to me. I drive him to school with my three sisters. Before The Farmer's Wife gave 'Roine' to me I was absent from school for more than a year because I was sick and it was too far for me to walk. When the doctor heard I had won a pony he said it was one of the finest things I could have for my condition. This was quite interesting to me, and I am glad to say I am now well again, and the doctor says 'Roine' has done his share in it, and also The Farmer's Wife of St Paul."

Your true friend, Clarence Busick.

"Joe," Harold Palmer, Oswego County, New York.

"My pony 'Joe,' is nice and fat and his hair is short, and he is the nicest pony in the town where I live. I love him very much and have many good times with him. We can take him into the house and he will eat sugar out of my hand. He also will do other tricks; such as, shake hands, come when I whistle, and put his front feet on a chair or box and many others.

"If only lots of other boys and girls could have a pony like 'Joe,' I am sure they would be very glad, for a pony is the best chum for which anyone could ask. I also want to say that the Webb Publishing Company used me well and did everything just as they said they would from beginning to end."

Your little friend, Harold Palmer.

"Cub," Eugene Mumpower, Buncombe Co., North Carolina.

"The morning after Christmas I called up the express man and he said 'Cub' was there. My! but I danced and hollered and cut up all sorts of capers till the folks thought I had just about gone crazy, I was so happy! I have two sisters smaller than I am, and they were most as happy as I was. I ran right out and got on the car and went to town and got 'Cub' right out of the express office and rode him home. He is the prettiest and dearest little pony I ever saw and the harness and little buggy are just fine! I can't tell you how much I thank you, but just a whole lot of course and will always remember the Webb Publishing Company as long as I live. Your true friend, Eugene Mumpower.

SEND YOUR NAME TODAY

Our ponies are given away so quickly that you will stand a better chance to get this one if you sit right down and write us a letter or a postal card or send us the coupon below filled out with your name and address (either way will be all right). The work we require you to do to become a contestant for "Sultan" is very easy, and any child who enters will win a fine prize, even if he fails to win "Sultan," which is the best prize of all.

Fred Hagerman, Du Page Co., Illinois.

"I am a litte boy 12 years old. I live on a farm about 3 miles from Naperville, Ill. I won a fine little pony called 'Sport' in The Farmer's Wife Pony Contest. 'Sport' is a good playmate and everyone who sees him likes him very much. Every morning after breakfast I clean him so he looks his very best and then go for a ride to see some of my little friends.

"We spend many happy hours together cleaning and decorating our little playmate. I often ride him to school and the little boys and girls all try to get to him first to give him his dinner. He is as gentle as a kitten and makes friends with every one. I wish all boys could get one like him." Your faithful friend, Fred Hagerman.

EVERY CONTESTANT A PRIZE WINNNR

All contestants will surely get a prize of their own choosing from a list which we will send you. Beside the Pony Outfit and Twenty-five Grand Prizes we shall offer Gold Watches, Base Ball Outfits, Gold Bracelets, Fountain Pens, Hand Bags, Flash Lights, Rifles, Shot Guns and dozens of other desirable prizes. If you become an enrolled contestant in this Pony Contest you can't lose but you can win "Sultan" if you write us.

"Mac," Ruth Mead, Saline Co., Missouri.

"I shall never forget my first drive to town with the Shetland Pony which The Farmer's Wife gave me. We hitched 'Mac' to my beautiful little cart, and as we drove through Main Street we attracted as much attention as if we had been a circus parade, for it was the only Pony Outfit in town.

"He is so gentle and good natured and will stand with his fore feet on the porch or on a box and let us slide off his back to the ground. I wish every litte boy and girl had a pony and cart like mine and had the jolly time I have with 'Mac' and I hope they will enter The Farmer's Wife Contest and get a pony half as nice as 'Mac.'"

Sincerely yours, Ruth Mead.

"Jean," John H. Elrod, Putnam Co., Tennessee.

"I am going to write and tell you what great friends 'Jean' and I have learned to be.

"I ride and drive him every day and we certainly have good times together. He is growing handsomer every day and all the little boys in my town wish they had one just like him. He is so kind and gentle and loves to be petted.

"I certainly am glad I entered The Farmer's Wife Pony Contest and I want to thank you for all the favors you did me and the fair way you treated me all the way through.

"I am going to send you some more pictures of 'Jean' and a nice story 'Lucky Pony Winner' just as soon as I can." Your friend.—John H. Elrod.

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THE FARMER'S WIFE, 570 Webb Building, St. Paul, Minn.

Please send me a Certificate of Entry and pictures of "Sultan" and tell me how to take care of Shetland Ponies. I haven't any Shetland Pony and want to own "Sultan."

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AGRICULTURE THE KEYSTONE OF NATIONAL PROSPERITY

ESTABLISHED 1880 PUBLISHED WEEKLY

VOL. 33.—No. 15. PHILADELPHIA, PA., SATURDAY, APRIL 12, 1913. 50 CENTS A YEAR.

Headle Dr. T. J. Rutgers College c g 13

An Example of Good Demonstration Work

By The Country Parson.

My German farmers, in St. Mary's County, Maryland, have for some time been talking to me of a ''government man'' who came around to visit their farms and tell them how to work a certain piece of ground, with the express understanding that they implicitly obey his orders and carry out his directions. They were at liberty to work the rest of the farm just as they pleased, but this particular piece of ground was to be worked as he pleased. Their inherent respect for scientific knowledge and authority inclined them to accept this proposition, altho they did not understand just why he directed them to do certain things which were strange to them. He was a ''government man'' and that was sufficient. It was perfectly natural that the government in this country should take an interest in them and their welfare, just as the Kaiser's government at home had done. Indeed, they thought it rather strange that the government did not place choice animals for breeding purposes in certain districts and discourage the use of any other.

I have finally managed to come up with this ''government man'' and discuss his work with him. Dr. Augustus Stabler, of the Agricultural Department, Washington, has charge of the farm demonstration work in southern Maryland. There are five counties in his territory, with a local agent or assistant demonstrator for each district. These assistant demonstrators select farmers in every section of each county or district who are willing to act as local demonstrators by carrying out the directions given by Doctor Stabler thru his assistants. In appointing these local demonstrators, great care is taken to secure the best farmers of a given neighborhood.

Doctor Stabler says that ''these best farmers are not always the same ones who have been attending institutes and reading agricultural literature, but are usually the men who lead or direct the work on their own farms and who pay close attention to detail. It is always hard for such men to [illegible] to attend meetings, and they seldom put [illegible] faith in what they read about farming written by men living in other states and working under what they suppose to be different conditions. Many of these men have been doing fairly well, and are [illegible] change their methods, as they should be. Many are slow at first to enter into any agreement which involves a change in their methods of work, [illegible] of money or system of management. The best farmers can nearly always be helped in some important lines, and then become our most valuable allies in the difficult work of transforming the [illegible] unsuccessful men into men with hope and interest in their work. The absentee landlord and his handicapped tenant will long remain the most difficult problem and the greatest obstacle to progress. Even in these difficult cases we have already succeeded in starting some excellent work, which will undoubtedly extend as the results inspire confidence, and the personal work of the agents promotes co-operation.''

This work was begun in Maryland, October 1, 1911, and Doctor Stabler now has 92 local demonstrators working 196 demonstration plots under his direction and the immediate supervision of his five district assistants. The season's work has met with such success that the farmers are now asking the demonstrators to direct operations, not only on small experimental plots, but on their entire farms. The whole thing is a magnificent illustration, on a large scale, of the copy book line, ''Example is better than precept.'' It is a university extension course of farm object lessons—a farmers' institute in constant session for 365 days each year attended by everybody who drives past the demonstration plot of a certain farm, which is intentionally located near the road where it will attract attention and invite questions. Since ''seeing is believing,'' this method of instruction has an educational value far superior to lectures and bulletins, which are, for the most part, heard or read by a very few people, very few of whom ever make any serious effort to put what they have heard or read into actual practice. It may be true that we are all imitators, but we like to see the results of what the other fellow is doing before we imitate his example.

A GOOD SEEDBED IS THE FIRST DEFINITE PROMISE OF A BOUNTIFUL HARVEST.

I have often wondered what real practical result was attained by the enormous amount of good white paper and printer's ink used since its organization by the Department of Agriculture in publishing voluminous reports which no farmer ever reads. The mountain has ever refused to come to Mohammed, and we have finally realized that Mohammed must go to the mountain. This field demonstration work is the result. Nor does the Department of Agriculture use any of the 15 million dollars appropriated for it annually to defray the expenses connected with this work. It still places its reliance upon the cloth-bound black volumes which generous Congressmen distribute among their constituents as testimonials of their regard; and the children of these constituents still use them for scrapbooks. It still conducts painstaking investigations and makes no effort to apply their teachings by actual demonstration. Consequently, there are more waste lands within easy driving distance of Washington than in the neighborhood of any other large city of this country.

It thus remained for the General Educational Board of New York, or the Rockefeller fund, to provide the means to carry on this work, and even the state of Maryland has not yet imitated its sister state of Virginia by making an appropriation to supplement the $5,000 per year spent within its borders by the Educational Board to apply the teachings of the Department of Agriculture thru the intelligently directed cooperation of Maryland farmers. But this will come. A state which is spending millions on its roads can not refuse to spend a few thousands on soil and crop improvement, without which these roads will largely fail of their purpose or have little purpose to serve.

Before beginning to organize his demonstration work in the fall of 1911, Doctor Stabler had a conference with Director H. J. Patterson, of the State Experiment Station. When asked what lines of work were most needed, and what teaching should be most emphasized in southern Maryland, Director Patterson laconically replied: ''Lime and grass.'' Mr. Long, the field agent, had already specified that ''corn and grass'' be grown on the demonstration plots the first year. Since he had also urged the liberal use of lime as a necessary preparation for the growing of corn and grass, there was full agreement between the recommendations of both experts. The work of Doctor Stabler and his assistants thus revolved around two questions: Where to get lime for the farmers, and how to get the farmers to use it? It is therefore not surprising that Doctor Stabler should jestingly speak of himself and his assistants as being ''lime agents.''

In southern Maryland all roads lead to some wharf or boatlanding, for the farmers have from time immemorial depended upon water rather than railroad transportation. Burned lime, unslaked, is both dangerous and disagreeable to transport by boat. If the cargo does not slake and endanger the safety of the vessel, it is most unpleasant to handle in a close hold and on the wharves. No Chesapeake Bay steamboat or sailing vessel would care to transport burnt unslaked lime.

This led to a limited inquiry for hydrated lime in sacks, which cost the farmers $7.50 to $8 per ton delivered at the wharves. Since a manufacturer can make three tons of hydrated lime out of two tons of burnt lime, or, in other words, since hydrated lime is one-third water and two-thirds lime, the cost per ton on a calcium basis was $12 rather than $8. This price was prohibitive—for the application of one ton of real lime per acre represented a larger investment than the market value of some farms. Yet it was impossible to raise a crop on these lands without the lime. Things looked very dark for the demonstrator and his "lime agents."

An unexpected piece of good fortune turned the tide toward success. At a farmers' meeting, held at the Arundel Academy, Ann Arundel County, in November, 1911, attention was called to the fact that a Baltimore oyster and fruit packing company had just put on the market ground oyster shells, which by analysis showed 95 percent of carbonate of lime, at a cost of $1.50 per ton. This lime could be delivered at all river landings, creeks and inlets by small sailing vessels for 75 cents per ton. The railroad rate was much higher, but this was again offset by the fact that ground magnesian limestone could be bought at York, Pa., for $1 per ton and delivered for an additional $1.05 at all points touched by the Pennsylvania Railroad. The Pennsylvania Railroad hauls stable manure and street sweepings from Baltimore and Washington to southern Maryland for 50 cents per ton by the carload. Ground limestone or ground oyster shells are far less bulky and much easier to handle than manure. Nevertheless, the railroad insists upon charging $1.05 for transporting the one article, while it transports the other for 50 cents. The Baltimore & Ohio, with its usual enthusiastic interest in Maryland, insists upon adding 40 cents per ton switching charges to this price, with the result that the rate on lime, via the Pennsylvania from York is less than the rate from Baltimore, via the B. & O. Why this should be so is one of those deep problems which only an Interstate Commerce Commission or a Public Service Commission can solve.

Since it has been made plain that ground magnesian limestone could be delivered to the farmer at a cost of $2.05, and ground oyster shells at a cost of $2.25 per ton, it now remained for these demonstrators to persuade the farmers to apply it. This was no easy task. Ground oyster shells had been tested by the Maryland Experiment Station 15 years ago, and found to be equal or superior to burned lime. Still very few farmers had used it. Indeed, there was a widespread prejudice against its use, for the idea was generally held that burning was necessary to render either limestone or oyster shells available. The farmer would point to an oyster shell beside the road and tell the demonstrator that it never rotted. Had he asked himself why the corn which grew beside the oyster-shell road looked better than the corn farther in the field, it might have dawned upon him that the dust of the pulverized shells which was blown upon the field possibly had something to do with it, but he might fail to think that far.

The idea that Maryland farmers possessed an untold wealth of high-class fertilizing material in oyster shells was so absurdly simple that even the director of farmers' institutes had to be "shown" before he consented to advocate its use. This doubt and prejudice made the work of Doctor Stabler and his assistants exceedingly difficult. It was overcome by a very simple experiment, made in different localities by different farmers. An acre of ground was carefully measured, divided into four equal parts and planted with corn, after applications of burnt shell, ground shell and burnt limestone had been made. A diagram of an acre in Prince George County will best show the result:

Corn

Plot 1 Nothing	Plot 2 Burnt Shell ¼ ton	Plot 3 Ground Shell ½ ton	Plot 4 Burnt Limestone ¼ ton
11.1 bu.	12.1 bu.	15.1 bu.	14.7 bu.

This piece of ground was reddish loam, which had grown a crop of cowpeas four years previous to the experiment, and then been permitted to lie fallow. The result was most favorable to the ground shell, for it not only showed a superior yield of corn and fodder, but a drouth-resisting quality above the other plots. This was especially evident toward the end of the growing season, after six weeks of drouth. The same result was reported by each of the five assistants. This is the more remarkable when we remember that the results of lime do not usually appear in the first corn crop, but rather in the clover with which it is followed, or the corn following the clover. Thru this simple demonstration such a degree of confidence in the work has been established that Doctor Stabler now has more applications for local demonstrations than he can possibly satisfy.

The following specific directions were given for the treatment of corn fields: "Plow the land as soon as possible, not less than seven inches deep. Sub-soil wherever the "plow sole" is hard or impervious to air and moisture. After plowing, and before harrowing, apply two tons of ground oyster shells or ground limestone per acre, and work into the soil thoroly while preparing the seed bed. Plant with tested seed of some pure variety, grown as near home as good seed can be procured. Plant in check rows 3½ to 4 feet each way and thin to two stalks in a hill. Harrow the field with a smoothing harrow (weather permitting) once or twice before the corn is up. When the corn is 4 to 6 inches high, cultivate rather deeply the first time and then shallow, about once every week until the ears are well formed. Sow a cover crop of cowpeas or crimson clover just before the last cultivating."

The careful following of this simple recipe on the farm of Mr. J. H. Drury, which is located in the Collington loam belt of Prince George County, resulted in the production of 75 bushels of corn per acre, on land which 10 years ago scarcely produced 15. Lime, legumes, deep plowing and level, frequent cultivation did the work. Unlike most soils of southern Maryland, this soil, as shown by repeated tests, shows no beneficial results from the application of phosphate and potash. The same results were obtained by Mr. D. E. Brown on the experiment station plots at Marlboro, which is also located in the Collington loam belt. Mr. V. R. Linthicum, Charles County, by manuring and liming a piece of sticky clay soil which was plowed to the depth of eight inches, overcame its acidity and produced 80 bushels of corn per acre upon a six-acre field which three years ago produced barely 14 bushels per acre. What makes this more remarkable still is the fact that in this whole district there was no rain to wet the soil between July 25th and September 25th.

Both Mr. Patterson, of the State Experiment Station, and Mr. Long, the Field Agent, had emphasized the necessity of grass demonstrations. Mr. Patterson said, "lime and grass," and Mr. Long said, "corn and grass." Both said "grass." To anyone who knows southern Maryland, especially lower Prince George and St. Mary's counties, this is not surprising. I have seen 500-acre farms in these counties which are not growing enough grass to feed one team. The amount of hay shipped to Baltimore and sold to farmers is astonishing. There will be no real farming in these southern counties until they do grow grass. Now, what has been done in this direction by Doctor Stabler and his assistants?

It would have been a mistake to have emphasized grass growing rather than corn growing during the first season. Corn was a more certain crop, it made a bigger show and the farmers were more accustomed to handle it. Besides, the heavy liming and the thoro working of the ground planted with corn was a splendid preparation of the seed bed for a grass stand. Consequently, the real work of obtaining a stand of grass on the demonstration plots began last fall. Alfalfa, Doctor Stabler tells me, is not on their demonstration list. I consider this a mistake, for I have seen a splendid field of alfalfa on a Leonardtown loam soil in St. Mary's County, and I see no reason why a stand of alfalfa should not be secured as easily as a stand of clover or other grass, which can be cut but twice instead of three or four times.

The demonstration plots for grass should have been seeded between August 15th and September 25th. A lack of rain made this impossible, and the seeding was deferred until the last of September or the first of October. Before seeding, the acre plot was limed as for corn (two tons of ground oyster shells or ground limestone per acre) and an application made of 200 pounds of acid phosphate, 16 percent, with 200 pounds of raw bone meal. It was then seeded with the following mixture: Orchard grass, 14 pounds; red top, 5 pounds; alsike clover, 5 pounds, and red clover, 10 pounds. Timothy was not used in the mixture, because "orchard grass and red top are better for poor land and make much more pasture." This was to be top-dressed with a light covering of fine manure in the winter, or about 100 pounds of nitrate of soda about April 1st, this spring. The weather last fall was very favorable for germination.

Mr. G. A. Hodges, one of Doctor Stabler's assistants has demonstration plots of ten varieties of clover furnished him by Mr. L. M. Westgate, who is in charge of the clover investigation work of the Department of Agriculture. This clover is seeded under ordinary farm conditions on his home farm of 500 acres, which he works with his two brothers. Mr. Hodges also has a plot of winter oats with white blooming crimson clover, seeded in September, which he intends to cut for hay when the oats are in the milk and the clover in bloom. If this experiment succeeds, it will not only go far toward solving the hay problem, but it will be advantageous in other ways, for the oats and clover may be removed in time to plant tomatoes, sweet corn, late potatoes, grass or alfalfa. Captain Ewell, St. Mary's County, succeeded in getting a fine stand of alfalfa by purchasing 20 tons of ground oyster shells and applying them with such success that he now has, to quote Doctor Stabler, "a green oasis of alfalfa in a desert of sour mud." If such results can be attained by the purchase of a few tons of carbonate of lime in the form of ground oyster shells at a cost of $2.25 per ton, then we can again have grass and real farming on what was long considered the wornout, worthless lands of southern Maryland. When that day comes, the farmers who profit by it will owe a large debt of gratitude to Doctor Stabler and his demonstration work.

A NOVEL SEED TESTER

At this season of the year every farmer is, or at least should be, testing his farm and garden seeds. Most of us have long realized that this practice is more of an investment than an expense—a sort of partial insurance against crop failures. There has been much said in the farm press and at institutes as to methods and devices for testing new seeds, and nearly every farmer has a way of his own, differing a little from his neighbors. Occasionally some way decidedly different is found, such as the following described one.

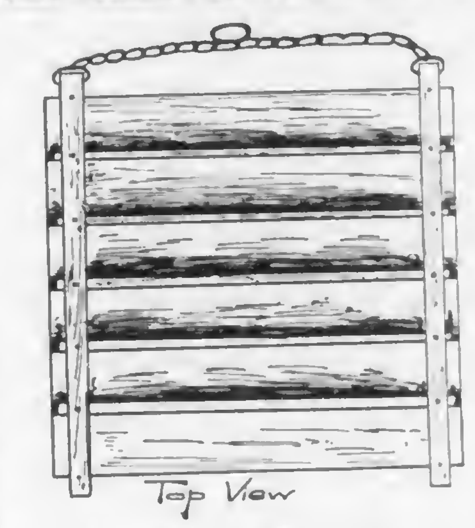
While down to an institute in Delaware County recently, I visited a farmer-poultryman who was testing his seeds in the incubator. He said he had followed this practice for a number of years and found it very satisfactory. It seemed to be his own invention, and as it can be adapted with very little trouble, seems worthy of a more general circulation. If the incubator is in use—as it is likely to be—at the time one desires to do the seed testing, place a piece of moistened flannel on a platter, sprinkle the seeds on the flannel and cover with another piece of flannel, also moistened. Now the platter is placed in the space in the incubator under the egg tray—in what we call the "chick nursery." Altho the temperature here is somewhat higher than is really necessary for seed germinating, it will not injure the most delicate kinds of seeds if the flannels are kept moist. My friend said:

"If I want to test any seeds at a time when my incubator is not in use, I make a false tray to fit into the place for the egg tray and fill it with good soil—sand-loam is best—and level it off. Then I drop the seeds for testing on this tray, moisten the soil thoroly, and cover with a moist cloth—flannel preferred. Then I put the tray in place, fire up the machine, keeping the temperature at from 80 to 85 degrees."

It is not necessary to moisten the tray of soil more than once after the first wetting, he told me, which seems probable, as with a uniform temperature of above 80 over all the tray, all good seed will germinate very quickly, and very probably with less difference between kinds than is shown when they are sown in the hot bed or open ground later. A little improvement on this way would be to mark off the tray in squares and the covering-cloth correspondingly, and then mark on the squares on the cloth the number of seeds and the kind sown in the corresponding square underneath. Otherwise one must keep a separate sheet-record, which may become mislaid or lost, just at the time one wants it. This would be impossible with the record on the covering cloth.—Clark Westford, Schenectady Co., N. Y.

WEEKLY TOPICS FROM THE FARM.

Nearly a Frost The last few days and nights have illustrated well the importance of care in planting peaches. While soil conditions and water drainage are extremely important factors, yet air drainage is just as important, and the lack of care in this matter is the cause of much failure. During the nights of March 20 and 21 the thermometer registered 28 in our orchards with every tree showing pink buds. This was a critical time, and some of the Jersey growers spent those nights in their orchards tending heaters and smudge fires. But our higher location made this tedious operation unnecessary, and we came thru without a bud being injured, while even with the precaution of heating, some loss was experienced in the lower orchards. Little if any damage was suffered this year from mice and rabbits, for the open winter gave these rodents an abundance of food other than tree trunks. However, we took the precaution of wrapping the trees last fall with a cheap building paper. This proves a very satisfactory protector; it is cheap, easily and quickly put on and is efficient.



A HOME MADE PLANK DRAG

Early Plowing Plowing has started in earnest now and the soil is just right for it. With such an early start we can get a perfect seed bed before planting time without a great deal of the usual spring rush, and with such a favorable start the season's work need never fall behind. We hope that more farmers than ever will use these early weeks for seed testing. While it is always advisable to buy seeds from the best growers, regardless of price, we have found from experience that this precaution is not enough.

Importance of Seed Testing We have purchased seed from growers of high reputation testing very low, and to safeguard against such a condition it is necessary to make a thoro test before planting, and now is the time to do it. Buy no seeds except on the condition that they test high. Before putting in alfalfa or clover make a thoro test of the soil for acidity, and if it needs it sow lime at once. It is needless to sow leguminous crops especially in an acid soil, for the results are sure to be discouraging. We are sowing some alfalfa on a good clay loam that apparently is not acid, but we are liming a portion of the field, and will note results in comparison with the unlimed part.

Plank Drag On this page you will notice a drawing of a plank drag. If we had to sell every tool on the place but three, we would keep the plow, disc harrow and plank drag, and with them we would do better farming than the man who would work with a plow, roller and spring-tooth or spike-tooth harrow. The drag will do the work of the roller and harrow combined, and do it better, unless the soil is a very stiff, lumpy

clay. We follow the plow with the disc, then with the drag, and the result is a smooth, mellow seed bed. When the plow is followed by the roller the soil is packed down too hard and much of the valuable soil water is lost. The drag pulverizes and fines the soil just as well, but it does not leave such a compact field. If the roller is followed immediately by a harrow, this objection is overcome; but nine farmers out of every ten allow the rolled soil to stand for at least a day, and then it is that the damage is done. It only takes a few minutes and a little lumber to make a drag, and you will find it the highest paying investment you ever made.—A Farmer.

The Distribution of Food Products

By Dr. CLYDE L. KING, University of Pennsylvania

II. THE COST OF DISTRIBUTION.

The first article in this series dealt with the national agencies in food distribution. It pointed out that,thru the rapid and extensive development of facilities for carriage of interstate freights and oceanic commerce, thru the perfection of cold storage, with the resultant possibility of hauling perishable foods long distances, thru the nation wide and, indeed, world-wide reports on crop conditions, thru the custom of selling in transit and of arriving at wholesale quotations on farm produce, the wholesale price of the output of the farm was fixed by forces over which the eastern farmer had relatively little control. That is why the price of farm products varies nominally in different parts of the United States, due to difference in freightage charges, etc., yet actually the wholesale price is now about the same. It is the purpose of this article to discuss the methods and cost of distributing food products from the farmer to the consumer, with special reference, not to transportation facilities, but to the hands thru which they pass.

Just what share of consumers' prices goes to the man who raises the food? Within the last year, two reports have been issued that attempt to answer this question for Philadelphia and New York City, respectively. The first was made by the author of this article to Mayor Rudolph Blankenburg on Philadelphia prices; the other, by the committee on markets, prices and costs of the New York State Food Investigating Commission. The former was made in October; the latter in August, of 1912. These reports are typical of prices received by farmers and paid by city dwellers.

Table Giving the Price Received by the Producer and each Middleman and the Percent Increase of each Price over the Preceding Price, together with the Total Increase of Consumers' Prices over Producers' Prices.

(From a Report by the author to Mayor Rudolph Blankenburg in October, 1912, p. 13.)

	FARMER	PLUS FREIGHT TO TERMINAL		JOBBER (1)		WHOLESALER		RETAILER		Per Cent increase of Consumer's Prices over Producer's Prices
	Price Received by	Amount	PerCent Increase over preceding Price	Price Received by	Per Cent Increase over preceding Price	Price Received by	Per Cent Increase over preceding Price	Price Received by	PerCent Increase over preceding price	
Butter (low grade) per lb.	$ .18½	$ .19	2	$ .21½	13	$ .24	11	$.32- .38	33- 58	73-105
Butter (high grade) per lb.	.23	.23½	2	.26	10	.29	11	.40- .45	38- 55	74- 96
Potatoes (l'w gd.)per bu. (3)	.53	.62	17	.68	9	.75	10	1.10- 1.30	46- 73	108-145
Potatoes (h. grade) per bu.	.63	.72	14	.80	11	.90	12	1.30- 1.60	44- 78	106-154
Eggs (low gd.) (2) per doz	.11	.12	9	.13½	12	.15	11	.25- .30	67-100	121-173
Eggs (high grade) per doz	.21	.22	4	.24	10	.27	11	.35	30	67
Huckleberries(l'wg.) pr.qt.	.04½	.05½	22	.06	9	.07	16	.12	71	166
Huckleberries (h. g.) pr.qt.	.07	.08	14	.10	25	.11	10	.15	36	114
Blackberries(l'w gd.)pr.qt.	.04	.05	25	.05½	10	.06	13	.12	100	200
Blackberries (h gd.) pr.qt.	.06	.07	16	.08	14	.09	12	.15	66	150
Live Poultry (l'w g.) pr.lb.	.06	.06½	7	.09	38	.11	22	.22	100	266
Corn per dozen	.15							.40		167
Tomatoes per pk. (3) . . .	.32	.32½	1	.36	10	40	11	.80	100	150

(1) For definition see article.

(2) In many cases these eggs are candled and part of them sold as freshly gathered eggs,—the others being sold as "rots and spots," etc. In other cases, however, they are sold to the consumer as eggs fresh from the farm. Thus one man writes that they sell them as such and asks: "What is the effect of the egg law on us?"

(3) This is the total price when sold in the quantities the average purchaser buys: that is, a basket of potatoes and a quarter or half peck of tomatoes.

Farmers' Versus Consumers' Prices in Philadelphia

The above table gives the prices received by the farmer for certain types of produce shipped into Philadelphia from the outlying counties. It also gives the prices paid by each set of middlemen and the consumer, and the percents added thereby.

The first item indicated in this table is the price received by those farmers whose sales are not large enough to warrant their dealing directly with the commission men. The price received by the farmers who sell direct to commission men would be the price indicated for the "jobber." But the average farmer, whose sales are not large and who is not in telephonic communication with commission houses, usually sells thru some intermediary, who in turn sells to the commission man. The price received by the farmer was secured from the price paid by country stores and other jobbers and from replies to scores of letters sent out to farmers in all directions from Philadelphia. This letter particularly asked the farmers to give the prices on all produce that they had sold during the weeks ending July 20th and 27th.

The cost of freight given as the second item is an estimate for freight on small quantities for distances of from 25 to 50 miles. Often it is the trolley rate, altho sometimes it is the cost of transportation by steam rail, or the estimated cost of wagon transportation. In some instances the freight charge has been estimated from points where the freight is greatest, while in other instances the minimum transportation charge is taken; all, however, are typical transportation costs.

The third item indicated in the table is the price received by "the jobber." By the jobber is meant the huckster who goes from farm to farm buying farmers' produce, or the country store man who sells to commission men, or the jobbers who buy for large wholesale houses or large Philadelphia stores. The prices received by the wholesaler were secured from the daily reports of wholesale prices.

The prices received by the retailer were taken from the reports sent in from the Department of Public Works. These reports were carefully prepared, at the instigation of the director, by the leading employes in the Department. There were, in most instances, a half dozen or more reports from each of the wards in the city. If there were not more than two reports from each ward, the data were not included, unless further investigation proved these reports to be typical. Every possible effort was made to secure reports for the same grade of goods and for the same week. Both the farmers and the employes of the Department of Public Works were asked to designate the grade of goods, and to designate with care the exact date of the sale or purchase. The price indicated for any article in the table is, therefore, a price for a given week.

From this table it will be noted that the excess of the price paid by the consumer over the price received by producer ranges from 67 percent to 266 percent, the average being 136 percent. This is an average increase of consumers' over producers' prices, as the "prices received by the farmer" are those received by the average farmer, who does not sell in large lots, and the "prices paid by the consumer" is the price paid by the average consumer, who buys in relatively small quantities.

Where the Costs of Distributing Foods Go

An analysis of this table shows that the costs of food distribution go for the following purposes:

1. A professional huckster or a country storeman buys from the eastern farmer and sells to the Philadelphia wholesaler. As a rule, he makes around 10 percent of the price he pays the farmer, plus the freight to terminal, thus increasing the total cost of the goods from 9 to 25 percent.

2. From 1 to 20 percent of what the farmer receives goes for freight to Philadelphia terminal.

3. Then the wholesaler deducts from 5 to 10 percent for selling it to the retailer, thereby increasing the price to the consumer on the average of 11 percent over the jobber's price.

4. Then for handling the goods and selling them to the consumer, the retailer charges from 30 to 100 percent increase over the wholesaler's price, with an average of 45 percent.

It is not meant that all farmers' produce goes thru just these channels, but it is very clear that it is this method of food distribution that fixes the price paid by the consumer, for it is this round-about method that the majority of country produce still takes.

That this table is typical is amply supported by evidence from all quarters. Of special significance is the study made under date of August, 1912, by a committee on market, prices and costs to the New York State Food Investigating Commission on

Wholesalers' Versus Retailers' Prices in New York City

A table in this report shows how much is added to the cost of a food product from the time it lands at the terminal in New York City, that is, the cost to the wholesaler, until it arrives in the hands of the consumer, that is, retailer's prices. In other words, the figures from this table, as given below, are the percents the retailer adds to wholesaler's prices, that is, the cost of distributing food products within the city. Thus the table reveals an increase from the terminal to the consumer of 17 percent per pound for creamery butter, and from 19 to 43 percent for eggs. Meat prices increased from 25 to 70 percent. Fish prices increased from 25 percent for blue fish to 85 percent for halibut; 160 percent for haddock and 180 percent for cod. Canned goods increased from 20 percent for a low grade of pork and beans to 70 percent for string beans, 72 percent for peas and 80 percent for a can of corn. Staple groceries increased per pound from 20 percent for flour to 33 percent for sugar and rolled oats, to 100 percent for rice, 112 percent for tea and 114 percent for codfish. Fruit increases were: Peaches, quart, 67 percent; Baldwin apples, pound, 116 percent; bananas, 135 percent, and lemons, 122 percent per dozen; while vegetables increased from 60 percent per pint box of tomatoes to 100 percent for cabbage, carrots and beets, to 150 percent for celery. Of the 60 products enumerated, 26 increased from 17 to 50 percent, 21 from 50 to 100 percent, and 14 over 100 percent.

And these prices, it must be remembered, are the costs added to food stuffs by the retailers only, including, of course, cartage and delivery charges.

What These Costs Mean to the Consumer and the Farmer

It is difficult for the imagination to grasp just what these costs of distributing farm produce mean in lower prices to farmers and higher prices to consumers. The consumers of New York City pay annually around $645,000,000 for food. This food costs at the terminal $350,000,000. That is to say, the people of New York City are paying over $150,000,000 each year to have their foodstuffs taken from the terminal to their kitchens. At a cost of 14 cents per meal per person, for all classes in Philadelphia, high and low, rich and poor, Philadelphia citizens are spending $225,000,000 every year for food. Of this amount, they pay something less than $75,000,000 each year in cartage and delivery costs and in retailers' profits. Of the $146,000,000 paid annually by the people of New York City for eggs, milk, onions and potatoes, less than $50,000,000 was received by the men who raised these crops. For certain produce for which the eastern farmer last summer received $1, the Philadelphia consumer paid $2.35.

Isn't it needless to point out other results of this method of distributing food products? Isn't it clear that the interests of every farmer and every consumer point to the necessity for developing a cheaper method of food distribution whereby at least much of the handling and the profits of a few of the middlemen may be eliminated? All are interested in cheaper costs for food distribution. The farmer is, of course, because it means higher prices; the consumer is, because that is his only hope for lower prices. So it is a question of the city as well as the country. If our urban dwellers are to have released a larger share of their incomes for other than subsistence purposes, these food costs must be reduced. Probably half of them now spend annually nearly half of their income for food. In the future that city will have the best civic and industrial prosperity which first perfects plans whereby subsistence costs may be reduced to its each and every citizen. In the past, city growth depended on the exploitation of virgin resources and in the development of new industries. From now on, city growth must hinge more and more largely upon community efficiency, expressed in lower living costs. The food problem is vitally wrapped up with the solution of the city's industrial supremacy and the extension of its industrial boundaries. Thus Philadelphia's every interest will be enhanced by placing its $225,000,000 yearly food purchasing power as near as possible to the gate of the farmers from whom the food supply must be purchased.

Moreover, the manufacturer and the employer of labor should be particularly interested in a reduction of the food supply costs, and in perfecting a closer industrial unity between the city and all of the surrounding agricultural communities. According to all statistics available in 1904, over 60 percent of the males, at least 16 years of age, employed in manufacturing, mining, trade, transportation and other occupations associated with industrial life, were earning less than $626 per annum, or about $2.00 a day, while 30 percent were receiving between $626 and $1,000, and only 10 percent earned $1,000 per annum. If to these, the agricultural laborers are added, 65 percent of all laborers in the United States receive less than $626 annually, 27 percent from $626 to $1,000, and only 8 percent $1,000 or above.

This means that half of the present total yearly income of the city wage-earners must be spent for food; and this means, with a family of five, that the food cost per day must not be over 28 cents per family, or five cents per person per meal. Now the labor employer, if he wishes contented labor, and the city, if it wishes well-nourished citizens, must squarely face this food problem. There are only two ways by which it can be solved. First, by increasing the money wages of the laborer, and second, by increasing the actual wage thru a reduction of living costs. Any plan whatsoever, therefore, that will tend to have any effect upon lowering food costs should have the hearty co-operation not only of the city as such but of every manufacturer or other employer and all others interested in the wage-earning class.

It is to plans for lowering food costs that the remaining papers in this series are directed.

NEW READERS

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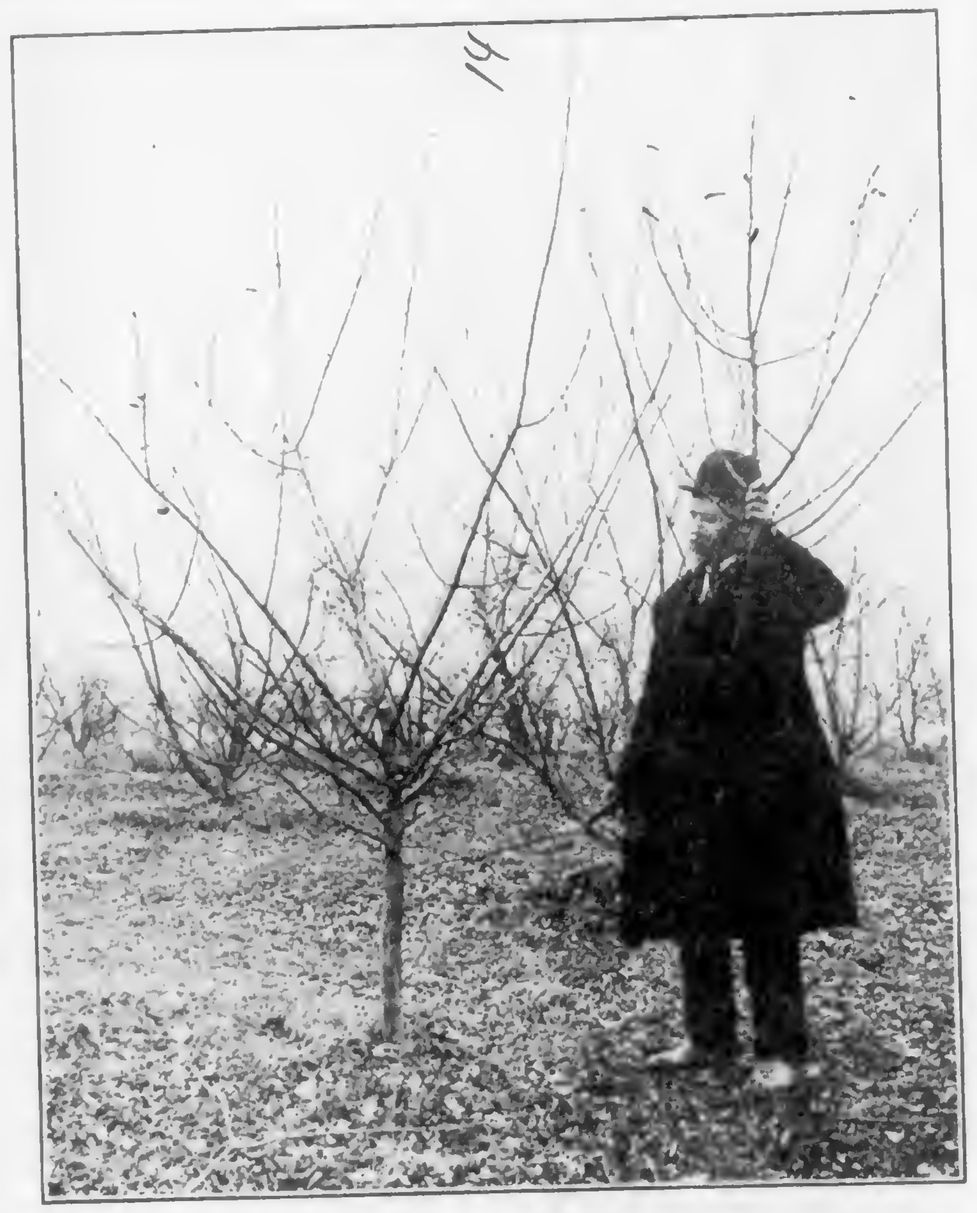
Horticulture

OVER-PRODUCTION OF APPLES.

By W. J. Lewis, Exeter Fruit Farm, Luzerne Co., Pa.

It seems to the writer that the very general and natural conditions governing the growth and marketing of apples make the above question easy of solution. There always has been and there always will be, and there never has been and there never will be, an over-production of apples. To explain this seeming contradiction, we know that some growers in some localities sometimes sell their fruit at a price below the price of production, at the same time other growers receive a price which nets them more than 100 percent profit. This fact would indicate that future over-production, just as many other orchard problems, is up to the men and the location. Many other factors enter into this question. The population of this country is increasing very rapidly, consumers are just beginning to appreciate the health-giving properties of the apple and its value as a food product, and other food products of the future will be higher in cost rather than lower. Consumers are more and more demanding apples of high quality. One-half at least of all the trees in the United States at the present time are varieties of second quality. Then, again, one-half of all the trees in the United States are in localities where the fixed charges of transportation and distribution are out of all proportion to the value of the product to the consumer. When we come anywhere near the over-production point, those of second quality and those too far from the consumer will go the way of the Bagley Peach orchard (pulled up by the roots). Therefore, to the grower who has the ability to keep down the cost of production (this probably means medium-sized orchards), to market his product in a business-like way, who has the soil and climatic conditions to produce fruit of high quality, with a location such as to enable him to place his product into the hands of the consumer with a reasonable transportation and distribution charge, the future has much of promise, and no fear need be felt of profitless crops.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MAKING A LOW-HEADED SPREADING TREE FROM ONE THAT WAS GROWING TALL. ONLY ONE CUT NECESSARY.

PLANT A TREE ON ARBOR DAY

Prof. H. A. Surface, State Zoologist, Harrisburg, Pa., gives the following plain and detailed directions for making trees grow. In consideration of the approaching Arbor Days, April 11th and 25th, which have been set by Governor Tener in this state, they will be found especially timely and helpful.

Replying to your inquiries as to how to plant a tree correctly, I can say, first, you should have a vigorous young tree, to start growth well. I prefer one-year-old trees in the fruit line, and certainly nothing older than three-year-old trees, even for shade purposes. The top should be pruned back considerably at the time of planting. The long or broken roots should be pruned off, leaving the stub not more than six inches in length. The roots should be kept damp from the time the tree is removed from the ground until the transplanting is completed. To do this it is a good plan to plunge them into a vessel of mud, so as to puddle or cover them with mud, or cover them with a damp cloth and keep sun and wind from them before planting.

Dig a hole two or three feet across. Make it deep enough that some good top ground can be put in the bottom of the hole, and the tree stand on this and be not more than three inches lower than it formerly grew. If you come to rocks or poor soil or clay remove these, so the hole can be properly deepened. Fill it with good earth, tramped in firmly, so that the tree will stand on this and be firm after the planting is completed. Spread the roots in different directions. Incline the tree five or ten degrees toward the prevailing wind, if it is in a region where the wind will strike it with force. Be sure that it will not be planted more than three inches deeper than it formerly grew. Less than this is generally sufficient.

Again, if there are places beneath the roots where these do not touch the soil, work earth under them with the hands. Then put good soil over the roots to a depth of about two or three inches. Use no manure or fertilizer in contact with the roots. Tramp this earth as firmly as can be done with the feet. Success in making a tree grow depends upon this firm tramping, with good soil that is not wet enough to cake or become hard and also not too dry.

After this fill in the hole with good top earth, not using red clay nor stones. It is all right to put stones over the top of the ground after the planting is completed, filling to about the level of the ground, but do not tramp it again, and do not use water at any time, unless it be after this final refilling. If water is used, be careful not to tramp or pack the soil after it is wet.

Be sure that at least half of the branches of the top are cut away or shortened, as pruning is necessary to stimulate good vigorous growth. As a rule, it should be upper branches, rather than lower branches, that are cut out, in order to make a good, low-headed, spreading tree. If you wish to force the growth upward, to make a tall tree, as on school grounds and on lawns, where you can readily look under the tree top from the windows, it is right to prune away the lower branches and leave the upper.

It is a good plan to drive three posts in the ground, as at the corners of a triangle around the tree, and by short boards or wire enclose it, so it will be protected from shaking or other disturbance that would be fatal while rooting.

SPRAYING THE APPLE ORCHARD

By Sheldon W. Funk, Berks Co., Pa.

The spraying of trees for the control of the different insects and fungus diseases, has today become one of the most important as well as, possibly, the most expensive of all the orchard practices. I have tried to show the importance of growing high-quality fruit, and, of course, if we do not spray, high-quality fruit is out of the question. Today we are reaping the harvest of past ignorance and neglect and there is hardly a single crop grown out of doors that is not affected by some insect or disease. Since orchardists must spray if we desire to grow marketable fruit, it is to our best interests to spray in the most intelligent manner possible, and the only way in which to do this is to thoroly study the problem of spraying.

If you are not positive of the identity of the insect which is injuring your trees, you can determine the spray material to be used by examining the nature of the injury. If the insect is a chewing one, that is, chews and swallows portions of the bud leaves or fruit, it may usually be destroyed by an arsenical poison, as paris green or arsenate of lead. If, on the other hand, it sucks out the juices from the plant or tree without destroying the outer tissues, you know at once that an arsenical will be of no avail; the insect must be destroyed by a contact spray, as tobacco decoction, kerosene emulsion, whale oil soap; or if the pest is found on the dormant trees, lime and sulfur.

Young trees may be sprayed very nicely with a hand pump, but on the large trees the best results can only be secured by the use of a power sprayer. In my estimation, four acres of good bearing orchard is worthy of a power sprayer, and from 20 to 25 acres is about all that one power sprayer was ever designed to spray. Here, however, the farmer with the small home orchard is at a disadvantage; he hasn't enough trees to warrant him buying a power sprayer, hence his trees are neglected. As I see it, he has two good chances of success: Get your neighbors together and buy a sprayer, to be used in the different orchards, or get some man to purchase a machine and do all of the spraying in the community; and, by the way, there is quite a nice opportunity for a good man in almost every community to make a neat little sum of money every year by spraying the trees in his locality.

The San Jose scale has, without doubt been the most destructive pest in the Pennsylvania orchards, because it not only ruined the fruit, but destroyed the tree, root and branch. Altho this pest has caused serious losses to a great many men, in my estimation it has been the greatest single factor in the production of high-quality fruit, simply by compelling the orchardist to spray his trees. The San Jose scale has been the means of teaching us how to spray.

The "scale," however, is today no longer feared by the competent orchardist, for in his lime and sulfur solution he has a very effectual remedy. The concentrated lime and sulfur is the best material to use as it is the most economical, is less caustic upon hands and face and may be prepared any time during the winter, when there is very little work, and then stored in air-tight barrels until the weather is favorable for spraying. I prefer the 1-2-1 formula; that is, 1 pound of lime to 2 pounds of sulfur to 1 gallon of water. In boiling 50 gallons of the material, first put 25 or 30 gallons of water in the cooking vessel; make your 100 pounds of sulfur into a smooth paste, in a separate vessel, pour the 50 pounds of lime into the cooking vessel, add the sulfur paste and stir very vigorously until the lime has finished slaking; add enough water to make the 50 gallons and boil vigorously for from 60 to 80 minutes, or until the sulfur granules have been dissolved. When it has boiled sufficiently place in air-tight barrels until ready to be used. If the barrel is not air-tight, pour in a little oil to prevent crystalization. Should the material attempt to boil over during the process of cooking, add a little cold water. The commercial concentrate, which may be purchased upon the market, is usually very good, and where only a small amount is needed, I would recommend its use; however, where large quantities are needed, you can save from one-half to two-thirds by preparing your own material. The material prepared from the above mentioned formula should be applied in the proportion of 1 gallon of concentrated to 7 or 8 gallons of water.

It is safest to use the hydrometer in diluting the material so that you may be sure of the strength because different lots almost always vary to a certain extent. I have had it to vary as much as .08 on the hydrometer; 1.03 is a very good density to apply, and in order to ascertain the amount to which your concentrated should be diluted, divide the decimal of the concentrated by the decimal of the desired spray strength. For instance, if your concentrated tests 1.30 and you want a spray of 1.03, divide the .30 by the .03, which gives you 10, or use 1 gallon of concentrated to 9 gallons of water.

This material may be applied to apples either in fall or spring, as long as the trees are dormant. In spraying for scale on the peach, I would always spray in the spring, as you then also control the leaf curl.

Of the summer sprays used on the apple the two most popular are self-boiled lime and sulfur and a dilute from the concentrated lime and sulfur. For the beginner, I would recommend the self-boiled solution, which is more safe. Use 8 pounds of caustic lime and 8 pounds of sulfur to 50 gallons of water. First place several gallons of water in the barrel, put in the lime and then the sulfur. After the lime has finished slaking, dilute to 50 gallons and you are ready to spray. If you wish to use the dilute concentrated, for apples use 1 gallon of concentrated lime and sulfur to 40 gallons of water; be sure that the material is well agitated when applied. These two mixtures are known as fungicides, and are usually applied for fungus diseases; if you wish to destroy a chewing insect, add 2 pounds of arsenate of lead paste to 50 gallons.

The first summer spray, which is only necessary in a few localities, is for the scab fungus. This disease not only spoils the appearance of the apple but, when serious, also causes a large number of the small fruits to fall by attacking the peduncle or stem of the apple. Spray with either of the above mentioned summer sprays at the time the buds begin to show pink. It is well to add the arsenate of lead to this application, as it will destroy the canker worm and bud moth, which may be prevalent at this period of the year.

The most important of all summer sprays is the first application for codling moth. This is applied immediately after the petals have fallen, at which time the calyx stands open, allowing the poison to be placed in the calyx cup of the apple. This is very important, because anywhere from 75 to 90 percent of the codling moth worms enter the apple at the calyx end. There are a few things which are very essential for successful codling moth spraying. First, spray at the right time, because the calyx cup closes within from 7 to 10 days after the petals have fallen; second, use plenty of material, so that you are sure practically every apple has been sprayed; third, use a very heavy pressure and a rather coarse nozzle. If you have ever examined a small apple at this stage you will find that the stamens of the flower cover the calyx cup in such a way that unless the pressure be strong and the spray fairly coarse, it is difficult to force the material thru the stamens into the calyx receptacle.

In spraying for codling moth in the Paragon Orchard, sometimes the arsenate of lead has been used with a fungicide and sometimes it was used with water only. In every instance when used with water only it gave the best results. This was rather difficult to explain, until recently the scientists have discovered that the little codling moth worm is somewhat particular about its food; its sense of taste seems to be very highly developed; therefore it would seem that when the poison was used with a fungicide, there was a rather strong taste which was not pleasing to the little fellow, with the result that he would spit out several mouthfuls before swallowing any of the apple, and in that way saved his life. From 3 to 4 pounds of the arsenate of lead paste to 100 gallons of water is sufficient for codling moth.

One spraying given in the manner above described will give very good results, and I would rather see a man make one careful spraying at the right time and in the right manner than two or three sprayings in a haphazard way, because he will have fewer wormy apples. If you desire to make a second spraying for moth, make it about two weeks after the first application. In the majority of cases no more spraying is necessary. We, however, have had considerable trouble with red spider. Self-boiled lime and sulfur has proven very effectual here. I do not suppose that the material kills the spiders, but they nevertheless leave the tree. Dilute concentrated—1-40—will also drive them away.

The apple blotch, which is a disease attacking the skin of the apple, appearing as dark-colored, star-shaped areas, which may cover almost the entire apple, is becoming rather serious, upon certain varieties, in some sections of Pennsylvania. It is a disease which should be watched pretty closely where it is prevalent. I have not had any personal experience in treating this disease, but it is claimed that a 2-2-50 bordeaux mixture, applied several times, will control it. Make the first application about the 1st of July and the second two or three weeks later. Bordeaux at this time of the year does not appear to russet the apples as much as when applied earlier.

Always have all parts of the spray machine in good working conditions before you start for the orchard. The man on the ground should have 50 feet of hose and the one on the tower about 20 feet. Use nothing but the best material, apply it thoroly and at the right time and your results will be all that you desire.

TESTS OF SUMMER SPRAYS ON APPLES

A report of spraying experiments received by the Office of Experiment Stations of the Department of Agriculture from the Connecticut Station shows that bordeaux has, on the whole, shown the best fungicidal value of any of the sprays tried. In the work with apples it was found that three sprayings, having lead arsenate in the last two, keep most of the fungi and insects under control. In the control of black rot on the leaves complete removal of the diseases branches should be combined with spraying. The prevention of rust requires a continuous coating of the leaves from the time they first appear until all danger of infection from the cedar apple stage is over. To reduce the russeting or burning of apples that occurs with bordeaux alone, the officials advise using the 4-4-50 formula in the first spraying before the blossoms have opened at the critical time for scab. In the second and third spraying a 1-4-50 formula may be used. Compared with the commercial lime-sulfur sprays, however, even weak bordeaux is apt to produce more russeting on such susceptible varieties as Baldwin and Greening. No recommendation is made of a substitution of lime-sulfur solutions for bordeaux on those varieties not seriously liable to russeting or on those very susceptible to fungus attack.

When commercial lime-sulfur is substituted for bordeaux, it should be used at the rate of 1¼ gallons per 50 gallons of water for all three sprayings. For the insecticide, lead arsenate at the rate of 3 pounds of paste, or 1½ pounds of powdre per 50 gallons of mixture may be added to the last two sprayings. The treatment recommended for the pear and quince is similar to that for the apple. For peaches, cherries and plums, where there is always danger of burning from Bordeaux and also often from commercial lime-sulfurs, especially if used with arsenate of lead, self-boiled lime-sulfur appears to be the best fungicide, since it produces, on the whole, the least injury of any spray tried. The 8-8-50 formula for all three sprayings has given the best results.

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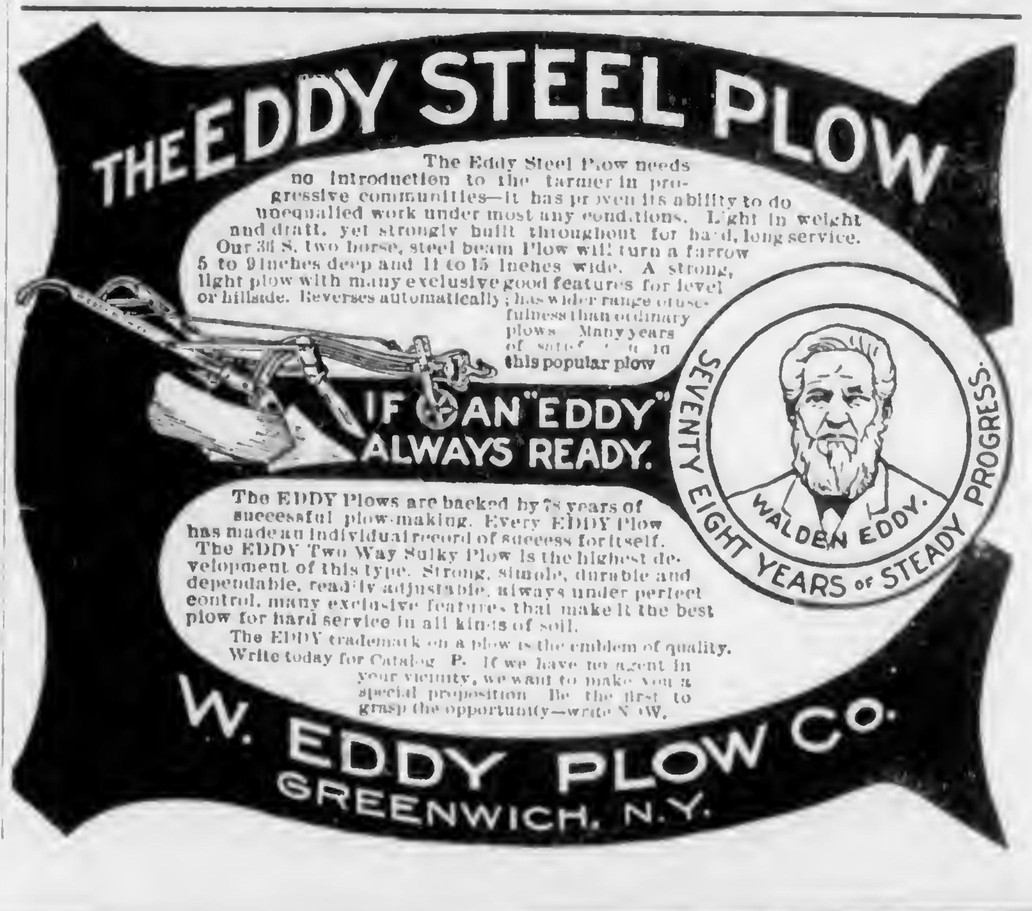
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TIGHT BINDING

SOWING GRASS SEED IN SPRING

There has long seemed to be an opinion among farmers that the oats crop is a poor one to seed down with. Twenty-five years ago I took charge of a large farm devoted to stock. I used no wheat in the rotation, growing only crops to be consumed on the place. Oats were an important crop with me for feed, as I fed a large number of horses and needed the oats, and I made thousands of tons of ensilage for the cattle from the corn grown. Hay was a very important matter, and not growing any fall crops, for the particular section where I was made the fall sowing of oats rather risky. Some winters they would do well, and in others would be winter-killed. Therefore, while still sowing the Southern winter oats, I sowed in February and March, and this being the only small grain crop I sowed, I was obliged to seed to grass with it.

I never failed to get a good stand of grass and clover, while my neighbors, who were seeding with wheat in the fall, often failed. In fact, I believe that sowing grass seed in the early spring on freshly prepared land is better than fall sowing, certainly better so far as clover is concerned. My practice was to drill the oats at rate of two bushels an acre, and then sow the grass seed mixture, usually timothy and red top, unless the sowing was intended for permanent pasture, when I used a mixture of orchard grass, red top and Kentucky bluegrass. The timothy and red top seed were lightly brushed in with a smoothing harrow after I had sown clover seed on the land, for these had to be sown separately, as it is not practicable to keep them mixed with the lighter grass seed.

I had one very steep hill field which I did not wish to keep in cultivation, but intended it for permanent pasture. It had been long used for this purpose before I took charge of the place, and had been neglected, as pastures very commonly are, so that the grass had run out to nothing but poverty grass. I wanted grass and good grass. Late in the fall I scattered a moderate coat of manure on the hill, and plowed it deeper than it had ever been plowed and at same time ran a subsoiler, so that the soil was broken 16 inches deep.

A neighboring farmer, seeing me do this, said that he hill would all wash away during the winter. There were a few old gullies on the slope, and I concluded that it had been washing because there was no where for the water to go but down hill, and I made a deep, loose bed for it to sink into. The hill laid bare all winter and was sown to oats in early spring and with the oats seeded down to orchard grass, red top and bluegrass. That summer the stand of grass and clover on the field was the talk of the neighborhood, and I had to mow it in the late summer. The next season, too, I made one crop of hay from it, and then turned it to pasture. That field now, after 20 or more years, is a good bluegrass sod, and would be better if my successors had top dressed it as should have been done. Grass runs out in pasture because farmers fail to realize that the making of the bony system of young animals very rapidly uses the phosphorus in the soil. But if a top-dressing of raw bone is added every season the pasture will increase in feeding value, especially if the weeds and rank tufts are kept mown off and the droppings scattered with the harrow. A sod can be maintained in this way for an indefinite time. If on land not limestone in its nature, bluegrass needs an occasional dressing of lime about once in six or seven years in order to insure its continual growth and to keep it from running out.—W. F. Massey, Wicomico Co., Md.

Horticultural Queries.

This department is conducted by Prof. H. A. Surface, State Economic Zoologist. Questions answered and timely and practical problems in treatment and control of farm and orchard pests discussed. Our readers are given the benefits of the advice of one of the foremost authorities in the country in this department. Address all queries to Pennsylvania Farmer, Philadelphia, Pa.

Saving Girdled Trees

Would you recommend trying to save young apple trees when they were girdled by moles this winter after the leaves were off? In my six-year-old orchard I find that four trees have been completely girdled, notwithstanding the fact that I used wire protectors. They girdled them underneath the surface. If sprouts were used to unite the sap again, would the bark finally grow together again and make a sound tree?—C. V. K., Kilmer, Pa.

The best treatment for trees that have been girdled is to cut them back well, and bridge graft them by setting in sprouts, as you say, to unite the cambium, or sap wood, above with that below the injured places.

After these bridge grafts are set in place it would be a good plan to put mounds of earth around the trees to cover the bridging entirely, and thus keep the twigs in place while they are starting to grow. If you will set five or six around each tree, you will be surprised to see how soon they will all grow solidly together and make a good strong trunk. You can use for this purpose the whips of twigs that you have cut off the tops of trees in the process of cutting them back, or you can use good vigorous shoots and water sprouts cut from any apple trees.

The girdling was not done by moles, but by mice or voles (the short-tailed meadow mice) that follow the tunnels of moles, and also make independent runways.

The Killing Temperature of Peaches

Will you please let me know what is the lowest temperature in winter that will not harm peach buds, also in spring when in blossom? Are there any bulletins on this subject?—A. R. T., Norristown, Pa.

The lowest temperature in winter that will not harm peach buds is generally believed to be about 14 degrees below zero. There are conditions, where this will vary. Last winter in some orchards it went to 20 degrees below zero, and the buds were not killed. In my own orchard it was 30 degrees below, and they were killed.

The limit with the open blossom is about the freezing point, or 1 or 2 degrees below. Sometimes a cold, dry wind, when in bloom, even tho it does not reach the freezing point, is enough to blight or destroy the fruit germ. Two years ago in this state there was considerable reduction of the peach crop due to this cause.

Trees that are well grown and vigorous are much less liable to be injured by freezing than those that have been poorly grown, unthrifty, scale-infested or otherwise left in poor condition. Also, trees that are weakened by disease or insect pests, especially by the San Jose scale, are particularly liable to be injured by winter freezing. Therefore, the best practical protection against such loss is spraying at the proper seasons, and with the proper material to destroy such pests. This, for the peach, is the dormant spray with the lime-sulfur solution. I can not refer you to bulletins on the subject of danger temperatures for trees of various kinds, in accordance with their conditions and advancement, as I think there is nothing extensive in print on this topic.

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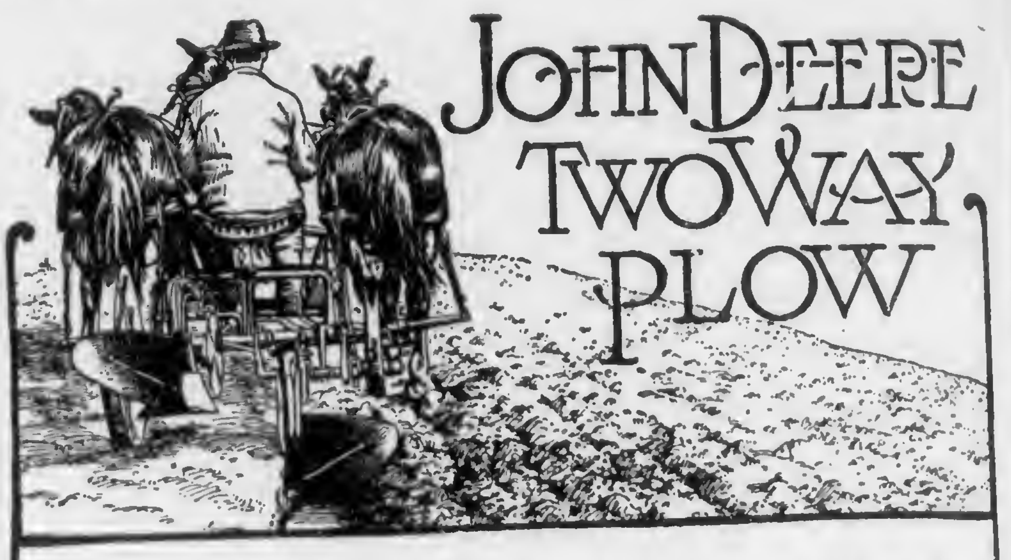
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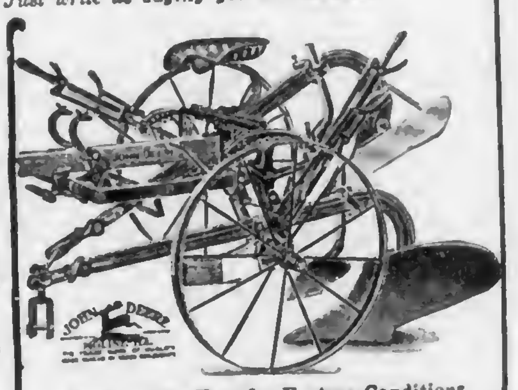

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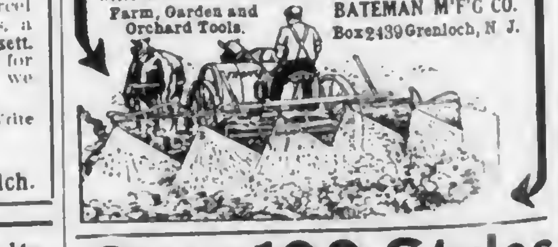

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Poultry

A WELL-MANAGED FARM

For the past few years I have been watching the farming operations of Mr. L. F. Ogilbee, Trumbull County, Ohio. During these years I have seen a soil which had been robbed by former owners until it would not produce a profitable crop, renewed to a higher state of fertility than when first cleared from the forest—a soil which was naturally wet and had become sour thru the system that it had been handled, transformed into a home which seems almost ideal for plants. These results have been accomplished while the owner made the farm pay for its own improvement and a fair profit at the same time. Mr. Ogilbee does not believe in carrying all his "eggs in one basket," and has followed a mixed system of farming. Different crops and animals have their ups and downs in market, and by having some of everything to sell that is commonly grown on a farm, part, at least, will generally be in demand at a paying price. The success that this farm has made can be credited to the fact that the owner believes in giving every crop and animal the best possible chance that he knows how to provide. Every leak and waste is carefully watched and guarded against. Everything must show a profit or leave the farm.

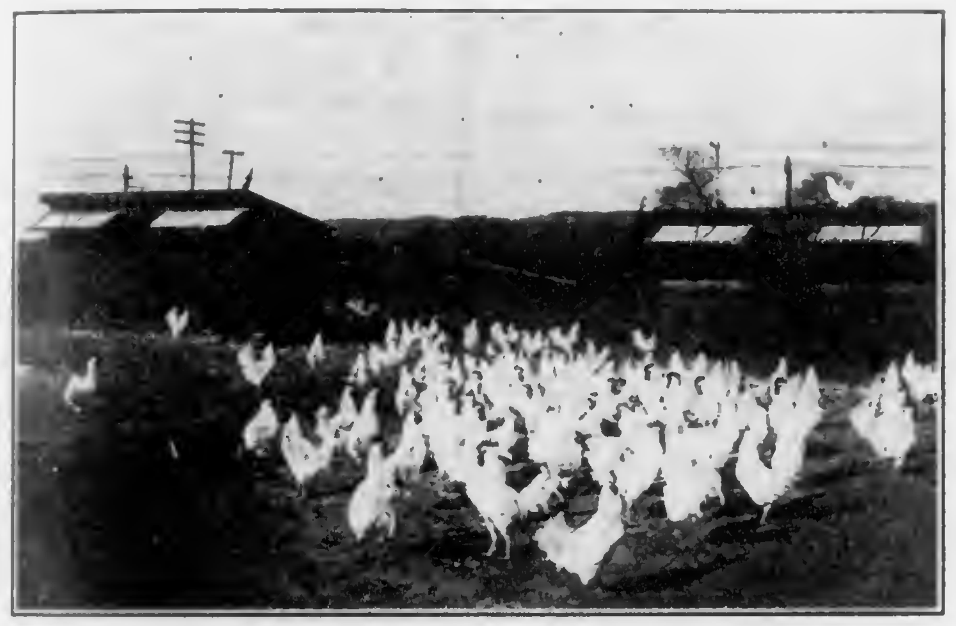
Two things have interested me most—the restoration of soil fertility and the poultry business as practiced on this farm. The soil on this farm is inclined to be wet; while the rotting roots of the forest trees formerly provided fair drainage, but when these were gone, nearly every year at sometime during the growing season, the soil become too wet for best results, and high yields were not to be expected, no matter what other treatment was given the soil. A neighbor had a steam ditching machine, and this was hired until all the land under cultivation was thoroly tiled. Now the low, wet spots produce as good crops as the higher dry soil. Besides, the soil can be worked earlier in the spring and sooner after a rain, thus extending the growing season.

This farm is located outside the limestone belt, and would not grow clover even when tiled. Lime was soon found to be a cure for this condition, and one or two carloads of ground limestone is used each year, at the rate of two or three tons per acre. This practice will be continued until the lime defficiency has been met. Clover now grows luxuriantly.

Mr. Ogilbee believes in the free use of commercial fertilizer as a help in building up the fertility of the soil. He buys the chemicals and mixes in the proportion which he has found gives best results on the different crops. A formula that analyzes close to 3 percent nitrogen, 10 percent phosphoric acid and 5 percent potash is mostly used. Nitrate of soda, 14 percent acid phosphate and muriate of potash are used. These chemicals supply a quickly available fertilizer, that rushes the plants from the start, and can be bought as cheap as any of the chemicals that furnish these elements. From 300 pounds to 1,100 pounds is used per acre.

A dairy of high-producing cows are kept, all hay, stover and silage grown on the farm is fed, and the manure is hauled on the fields at once. This method returns the fertility removed by the crops in the best possible manner. Considerable commercial feeding stuffs containing high percentages of protein, such as gluten feed, cottonseed meal, oil meal, and bran are purchased to balance the home-grown feeds, which also adds fertility to the soil. Such soil management takes care of the humus supply, and the soil is certainly becoming richer each year in this essential element. Larger and better crops each year and increased net profit tells the story of such soil management.

The poultry is cared for in the same line as the other farm work. They, too, are given the best possible chance and must "make good." Eight hundred to one thousand laying hens are kept. White leghorns have been found to be the most suitable variety for the conditions existing on this farm. They are good hustlers, hunting a considerable part of their living during the summer months and are good layers. The eggs are guaranteed strictly fresh and are shipped to a special trade in Youngstown, Ohio, at an advance over market quotations. A new laying house has just been completed, 18x100 feet. This house is expected to centralize the work in caring for the hens over the colony house system. But, with this exception, all the buildings are of the colony house type. These houses are constructed from cheap, rough lumber sawed from timber cut on the farm (see pictures). Prepared roofing is nailed on the outside with cleats to make the houses wind and rain proof. This makes a very cheap and serviceable house. The expense for buildings is very low on this farm, and here is where much of Mr. Ogilbee's success with poultry can be credited. The overhead expense per hen can be kept very low with such houses, and free range is provided on this farm.



A GROUP OF PRIZE LEGHORN COCKERELS.

Another novel practice, which interested me, is Mr. Ogilbee's method of providing heat for the young chicks. When the chicks are removed from the incubator they are placed in the portable house. A cheap sheet-iron stove that can be purchased from the mail order houses for about $2.50 each are used to supply the heat. A hover is made from sheet iron, about four feet square and eighteen inches deep, so as to set over the stove and to about twelve inches from the floor. This hover can be made by any tinner at a small cost, or by anyone who is handy with tools. A heavy quality of flannel cloth is fastened to the bottom of the hover, so as to keep the heat in as much as possible. The small chicks will soon learn to regulate their own temperature by passing in or out of the hover when too warm or cold. Only in extremely cold weather will the stove need attention oftener than twice a day.

Mr. Ogilbee's repair shop contains a complete line of wood and iron working tools that may be needed for repairing tools and implements on the farm. All the poultry buildings, hovers and horseshoing is done by Mr. Ogilbee. This repair shop more than saves the original cost each year in time and money than the same work would cost at the local blacksmith shop.—H. E. Moats, Mercer Co., Pa.

SANITARY POULTRY HOUSES

At the recent smoker of the Monmouth, N. J., Poultry Club, Dr. Robert Dickson, a well-known veterinarian and poultry expert read a paper on "Sanitary Poultry Houses." His address was as follows

"The first consideration in building an ideal poultry house should be the comfort and convenience of the birds that are to occupy it. Far too many builders consider their own convenience first. The essentials of a good poultry house are abundant sunlight and ample ventilation with no drafts. The great majority of poultry house builders wholly ignore these requirements. They assume that anything is good enough for a hen, or they build a house of an undesirable type because neighbor Jones built his that way. It is true that our domestic fowls seem to be able to adapt themselves to extremely unfavorable conditions when compelled to do so, but they make up for it in a lower egg yield and shrunken profits. Buildings for poultry should be economical of construction, convenient, comfortable, dry, cheerful, well ventilated and sanitary. Unsatisfactory egg yields are frequently traceable directly to the conditions under which fowls are housed. Moreover, many of our most troublesome poultry diseases are due primarily to improperly located and poorly constructed poultry houses. Such unsatisfactory results rest on the fact that egg production is dependent on the fowl's physical condition.

"Fowls must be kept in good health if they are to be profitable. In order to keep them in good health we must have properly constructed, sanitary houses, where there is an adequate supply of fresh air and sunshine without draft. Many houses are perfectly tight when newly built, but after one season's swelling and shrinking, crevices will open at the joints and pernicious drafts follow. The disadvantage of glass windows is that glass radiates the cold. The curtain front gives ample light and ventilation without a draft."

"Dampness in the hen house is a serious proposition and is one of the surest means of promoting disease. Fresh water is very essential to the fowls' health and egg production, eggs being largely composed of water. The odor of roup is very readily detected, and it is well to pass thru the houses after the birds have gone to roost, and if any symptoms are noticed put the entire flock under preventive treatment.

"Fowls need a chance to wallow in the dirt in order to free their bodies of scales and lice. Without this their bodies become covered with broken down scales, which, together with lice, cause intense irritation. In the winter a dust bath must be provided inside of the poultry house, and should be placed so that the sun strikes it part of the day. For this purpose an ordinary grocery box filled with fine sand to which has been added a little insect powder is quite effective. Sifted coal ashes and road dirt also make effective dust baths.

"While the total annual value of poultry products approaches a billion dollars, it is true that the great bulk of our market supplies comes from small flocks kept on numberless farms and in the limited space of city and village home lots. In short, there are comparatively few poultry plants of large capacity which have been in successful operation for ten or more years."—D. T. Hendrickson, Monmouth Co., N. J.

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TIGHT BINDING

Dairy Rations and How to Balance Them.

By ERNEST L. ANTHONY, Dairy Husbandry Department, Pennsylvania State College.

Now that we have learned what elements are needed in feeds for milk production, and how the comparative value of each is figured out, we will turn to the combination of these feeds into mixtures containing these elements in their right proportion and most economical forms.

It is necessary that the proposed feeds shall contain a proper amount of net energy to supply food for milk production. As it is essential that we have enough protein in our feed, as has been shown, this makes it necessary that a certain proportion of the net energy in the feed shall be balanced by a certain proportion of protein. Figuring out our feed so that it will contain the right proportion of protein to net energy is called ''Balancing the Ration.''

Before starting to balance a ration it is first necessary for us to know just what proportion of protein we must use. This amount will vary with the following conditions We have our feeds roughly divided into two classes, concentrated feeds, such as grains, etc., and roughage, such as hays, silage, fodders, etc. Now in the cow, as we have shown before, we have two things to supply, the maintenance and growth of the body and the food needed for milk production. Under average conditions the animal should and will eat enough roughage to maintain the body so that the concentrated part of the feeds will be used for milk production. However, if the roughage is of a very coarse, low-protein nature, then it will be necessary that we use what is called a more narrow ration. A narrow ration is a grain mixture that contains a larger proportion of protein to net energy.

By a careful study of the various roughages used as feeds and their analysis, we are able to divide them into these three groups and assign the proper ratio that should be used in the grain mixture to each group. Group No. 1 includes timothy hay, corn stover and corn silage, or any combination of them. These are very low in protein, which makes it necessary that any grain mixture which is fed with them must contain more protein. With these feeds a narrow ratio of 1 pound protein to each 4 therms net energy must be used.

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Out of Golden Queen De Kol 71336. With a Record of 30.15 lbs. Butter in 7 Days. Head of Home Farm Herd, Lehigh Co., Pa.

Group No. 2 takes care of such feeds as alfalfa hay, clover hay, or a combination of silage with any of these hays, and where alfalfa hay or clover comprises at least one-half of the roughage. In this group we want a medium ratio of our protein, about 1 pound of protein to 5 to 5½ therms net energy. Group No. 3 includes clover hay and alfalfa hay as the entire roughage. This will take a wider ratio of about 1 pound of protein to 7 therms net energy.

By looking over these groups we find that as our roughage gets better, that we can feed a wider ratio in our grain mixture. As our protein is the most expensive part of the ration, then the better our hays or roughages are, the cheaper will we be able to make a mixture of our grains or concentrated feeds. But if we are compelled to use the poorer roughages, such as are found under Group No. 1, we will have to feed a somewhat more expensive feed mixture.

In determining our ratio there is one other thing that must be taken into consideration, this is the amount of milk or fat that the cow is giving each day. The amount of milk and fat varies so much for different herds that it is necessary to take account of this. Prof. H. E. Van Norman, in Bulletin 114, Pennsylvania State College, takes account of this and adds it to the groupings of the roughages in a table so that we can tell at a glance just where our particular herd belongs. This table, called Table No. 4, gives us both of these things combined.

Roughage	When feeding 1 pound of grain for each three pounds of milk produced.
Group 1—Timothy hay or corn silage, or corn stover, or any mixture of any two or three of them.	For cows producing less than 20 pounds of milk per day, ratio should be 1 to 4.5. For cows producing over 20 pounds milk per day, ratio should be 1 to 5, net energy to protein.
Group 2—Mixed hay, half clover or 5 to 7 pounds of clover or alfalfa with silage or corn fodder.	For cows producing 3 to 3.5 percent fat, protein 1 to 5.5 net energy. For cows producing milk testing 3.5 to 4.5 percent fat, protein 1 to 6 net energy. For cows producing milk testing over 4.5 percent fat, protein 1 to 6.5 net energy.
Group 3—Where all the roughage is clover or alfalfa hay.	For cows producing milk testing 3 to 3.5 percent fat, protein 1 to 6 net energy. For cows producing milk testing 3.5 to 4.5 percent fat, protein 1 to 7 net energy. For cows producing milk testing over 4.5 percent fat, protein 1 to 8.5 net energy.

Table No. 4. Ratios for Different Roughages, Qualities and Quantities of Milk.

Where we do not know the exact average of our herd we can take it at 4 percent and get a pretty close average. If the cows are mostly Jerseys, it will be a little above this, or if they are mostly Holsteins it may be a little below.

We now know just what ratio of protein to net energy is needed for our particular herd. Our next step then is to select and combine our feeds that will make up this ration in its cheapest form. The first thing that we want to take into consideration in selecting our feeds is to their cost. By this we do not mean their cost per ton, but their relative actual cost of the net energy and the protein which they contain. (This we have done in Table No. 2 of our last article.) These have been further classed in Table No. 3, the comparison table of this last article. In selecting feeds for a grain mixture, as a basis select those feeds which furnish net energy at the lowest cost. If we select first our feeds which furnish net energy the cheapest, we have always laid the foundation for a cheap mixture. This is because we have from 3 to 8 times as much energy as protein in the mixture. When our cheap net energy feeds have been picked out, then combine them with those feeds which furnish protein at the lowest cost. When they have been mixed in their proper proportion, a cheap ration will result.

A very large amount of oil meal should not be fed in the feed because it has a very loosening effect upon the animal. A large amount of cottonseed in the ration has just the opposite effect, having a tendency to bind the animal; and it should never be fed in more than 4 pounds each day, and 2½ to 3 being a good average amount. Oil meal should not be fed in the ration more than 1 to 1½ pounds per day. If our feed is too concentrated, as it would be if we fed oil meal alone for a feed, the digestive juices do not have a chance to work upon it and give us as good results as if the feed were more loose and bulky. Our mixture should be composed of more than one feed, if possible, as a greater variety in the mixture will always make a feed much more palatable, and the animal will not tire of it so quickly. The mixtures used to feed many of the high-producing cows contain as high as ten different feeds. A great number are used in these cases to give as palatable a feed as possible and so that the cow will eat the greatest amount and still relish it.

An Example.—When we have studied out our own particular conditions and know what ratio we must use for our herd and about what feeds we must select from, we are ready to make our ration balance. As an example to illustrate how the ration is balanced, suppose we have the following conditions: We have a herd producing about three gallons of milk per day average, or about 25 pounds. Our roughage is timothy hay and corn silage. Now by our roughage table No. 4, we find that our roughage comes under Group 1. Then we look to see how much milk is being produced, which is 25 pounds. Then in our other column of the table we find that we must have a ratio of 1 to 5. Now in our comparative table we can tell the cost of the various feeds, both per ton and per actual protein and net energy.

By running down the list in Tables Nos. 2 and 3 we find that the corn and cob meal furnishes our net energy the cheapest, and that distillers' dried grains is also cheap in net energy. Gluten feed is also cheap in net energy, being slightly cheaper than the distillers' grains. We then have three grains with cheap net energy, but being very low in protein. They will do to supply a large part of the net energy, but we must add some others very high in protein. As we look down the column marked protein cost in Table No. 2, we find that cottonseed meal is the cheapest source of our protein, as well as containing a very large amount of it. Probably the addition of a certain amount of cottonseed to the other three will make our mixture right. If not, then we can look up some other feed high in protein and cheap and add a small amount of it also.

In making a trial balance of this ration we will start with even hundred pound lots. As our mixture must contain 1 pound of protein to every 5 therms of net energy, we must have the largest amounts of our mixture to be high in net energy. We will take the following: 300 pounds corn and cob meal; 100 pounds cottonseed meal and 200 pounds gluten feed.

Now by looking at the table we find how much digestible protein and net energy in each of these feeds per 100 pounds. We find that corn and cob meal contains 4 pounds of protein per 100 pounds and 72 therms net energy, or 12 pounds of protein and 215 therms net energy for the total of three hundred pounds. Then our gluten feed contains 20 pounds protein and 79 therms net energy per 100 pounds, and our 200 pounds gluten would contain 40 pounds protein and 158 therms net energy. Our cottonseed contains 35 pounds of protein and 84 therms net energy. This is the amount that we are going to use. If we would place all of these out in a simple table it would show us more readily what we have. Table No. 5 is a good example.

	Protein	Therms Net Energy	Cost Therms Net Energy
300 lbs. corn and cob	12	216	$3.37
200 lbs. gluten feed	40	158	2.80
100 lbs. cottonseed	35	84	1.65
600 pounds	87	458	$7.82

Table No. 5. Showing a Trial Ration.

Dividing the 458 therms net energy by the 87 pounds protein, we find that our ratio is 1 to 5.26; that is, our ratio equals 1 pound protein to 5.25 therms net energy. In our first trial we have come fairly close to the right ratio, but it is still too wide; that is, there is too much net energy to the protein. Now to bring it more nearly to what we want we should add a small amount of some concentrate, high in protein. As only one-fifth of our feed is cottonseed, we can add some more cottonseed and help it. We will add about 20 pounds more cottonseed to this and see if it will bring our ratio nearer to what it should be. We thus have Table No. 6.

	Protein	Therms Net Energy	Cost Therms Net Energy
600 pounds	87	458	$7.82
20 lbs. cottonseed	7	16.8	.33
620 pounds	94	474.8	$8.15

Table No. 6. Showing Ration Balanced.

Again dividing our 474.8 therms net energy by 94 pounds protein, we find that our ratio is 1 to 5.05, or practically 1 to 5, which our requirements call for. The cost of 100 pounds of this mixture is $8.15, divided by 620 pounds, or $1.31 per cwt.

By the addition of 20 pounds of cottonseed we have changed the ratio of the mixture until we have secured enough protein to make the ratio 1 pound to each 5 therms of net energy. If our addition of the 20 pounds of cottonseed did not bring it up enough, then we could add a greater amount until we did get it to balance out right. If in this case we would have found that we had too narrow a ration instead of too wide, that is, would have had too much protein for the energy, then we would have added more corn meal or gluten feed until we widened the ratio to that which we wanted.

In this ratio we have a mixture of four different feeds, all of them good and quite palatable. It now remains for us to see if we have secured the feeds which will make it the cheapest; if not, then we should take out some one or part of them and substitute the feeds which we find will be the cheapest. In our ration we find that we have a total of 474.8 therms of net energy, and that it has cost us $8.15. Then 100 therms would cost us $1.70.

This is probably the cheapest we can get it for this ratio, for we have selected for our mixture the feeds in which we find that the net energy and the protein were the cheapest. We can check this up, however, by substituting for our cottonseed some other feed, as oil meal, and see if it will cheapen the ration any, or we can use some other feeds instead of the gluten feed, and by varying the amounts used get our ratio of 1 to 5. Then by figuring out the cost of the net energy we can see if it will be any cheaper. Often in our feeding work we can not secure just the feeds that will make us the cheapest ration, and then it is necessary for us to figure out the use of several others that we have or can buy, and see which of these are the cheapest for us to get.

In this ration we figure out the cost of 100 pounds feed by dividing the cost of the total feed, in this case $8.15, by the total number of pounds in the mixture, 620 pounds. This gives us $1.31, the cost per 100 pounds. However, the cost per hundred pounds feed is not the right way to estimate the economy of a ration, a certain combination of feeds may result in a cheap mixture per 100 pounds, but a very expensive one from the actual food value that it may contain. A mixture of oats and corn meal will illustrate this.

In the next and last article of this series will be taken up the making out of several rations with different feeds, making them up to different ratios. It will also take up the changing of the rations that are now being fed, in such a way that we can make a better feed, get more out of it, and still in most cases give us a cheaper mixture. This last article will contain an extended list of almost all the different feeds which will ever be used in this part of the country, showing their analysis and computed value for use with this feeding standard.

FARM BUTTER MAKERS

Pennsylvania is the leading farm butter-making state. More than $15,000,000 worth of butter is made annually on our farms. For the purpose of improving the quality of much of this butter the Dairy Husbandry Department of the Pennsylvania State College will have a butter scoring contest. It is the purpose of this contest to stimulate interest in good butter by friendly rivalry. It is also known that the defects of much of the butter at the present time could be prevented. A contest will help to learn just what the defects are, and in a large measure how they are caused and prevented.

The plan is to have four contests during the year; on April 22, June 24, August 20 and October 22. Each contestant should send one pound of butter by parcel post or express to the Dairy Husbandry Department, State College, Pa., to reach there not later than the dates given above. The butter should be carefully wrapped with considerable paper. The expense for postage will be no greater unless two pounds is reached. Upon arrival the butter will be put in cold storage and held until properly chilled, when it will be scored by a competent judge. The sample will also be tested for moisture. This information, together with comments on the butter and suggestions for improvement, will be sent to each contestant. The butter, after being judged and samples taken for analysis, will be sold to help pay the expense of conducting the contest.

The following score card will be used: Perfect score—Flavor, 45; body, 25; color 15; salt, 10; package, 5. Total, 100.

Awards.—A silver cup appropriately engraved will be sent to the contestant who has the highest average for the four contests. Write to the Dairy Husbandry Department, State College, Pa., for entry blank, stating your name and address plainly.

TO CONTROL STOCK YARD ANIMALS

Since the recent publication in Pennsylvania Farmer of the article on Stock Yard Bulls, I have received numerous communications, generally endorsing the protest expressed. Some others have hinted that I have probably been misinformed in relation to the true state of affairs, as an inspector is in constant attendance upon the coming and going of the animals at the stock yards. To those I want to say there has been no misconception of actual conditions; all statements have been minus rather than plus and the information has been entirely reliable and correct. I may refer to a letter from State Veterinarian Dr. C. J. Marshall, in which he says:

''We have been criticised for the way we handled the bull question and other interstate animals at the Lancaster stock yards. In most cases the trouble is due to the fact that the man who is really to blame is the commission merchant, but the law compels us to bring prosecution against the man who ships the cattle into the state. House Bill 1010, which has been introduced into the house, is really a revision and codification of the present laws of the State Live Stock Sanitary Board, and will give the additional power necessary to handle such cases.''

House Bill 1010 was introduced by Mr. Stone, has been reported out by the agricultural committee and should become a law. It is hoped that all breeders of purebred cattle, all dairymen who own valuable cows, and all citizens who have a realization of the dangers to the public health by the transmission of tuberculosis by the consumption of milk from tuberculous animals will study the provisions of this bill and urge their representatives at Harrisburg to support it.—W. F. McSparran, Lancaster Co., Pa.

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ESTABLISHED 1880 PUBLISHED WEEKLY

Established 1880. Published Every Saturday.
Entered as second-class matter at the postoffice at Philadelphia, Penna.

The Lawrence Publishing Co., Proprietors
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M. L. LAWRENCE..........Vice-President
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Branch Offices For Advertising Only
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One Year	52	copies to one person	$0.50
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Philadelphia, Pa., April 12, 1913.

FAKERS AND SWINDLERS

That the farmer has a greater confidence in the integrity of human nature is much to his credit, but it costs him money every year. The days of gold brick selling are over, and yet this same sort of swindling is going on every year in all parts of the country and in a variety of forms. Each season we learn of some fake agent who, by misrepresentation and false claims, robs the farmers of honestly earned money. Such men are at work today, and we hope that every farmer will be on the lookout for such agents and report them to the proper authorities whenever found. There is today an agent in certain counties of the state representing a nursery that is unknown, and selling peach trees on the absolute guarantee that the trees will bear a full crop the second year. Such an agent is obtaining money under false pretenses and should be dealt with accordingly. The bearing age of a peach or any other tree depends largely upon its care after planting and not upon the tree. The guarantee that backs up such a claim is worthless and the chances are that the tree is of little value since illegitimate means must be employed to sell it. Another false agent now working in the state has even a greater "fake." He sells capsules filled with a liquid which, he claims, when inserted into the bark of a tree will prevent scale and "worms" from attacking the tree for four years. Such a claim as this is absurd, and much orchard damage has been done by injuring the bark of sound trees in order to use these worthless capsules. Even if scale and other insects could be controlled by such a simple method, it would require great care to pierce the bark in such a way that fungus spores would not enter and start a rot in the heart of the tree. Beware of these agents who make extravagant claims for preparations and powders to do great things in a short time. Deal with the man who represents a house that you know is doing an honest business and help rid the country of these pirates and unscrupulous agents.

COST OF MARKETING

So much has been said and written on the subject of the high cost of living that the whole matter has become hackneyed and meaningless. Such discussions are usually so full of generalities and theoretical speculation that they mean little to the average reader and lead nowhere in seeking a solution. The article on page 3 of this issue, discussing the cost of distribution, deals with actual conditions in the two largest markets of the East. The figures presented are the result of a careful investigation of prices under present systems of marketing, and they show very conclusively that the high cost of living is based on the high cost or wasteful method of marketing. We suggest that our readers preserve the tabulated figures presented with this article. They give a condensed summary of the cause of high prices to consumers, low prices to producers, the cost of the needless chain of middlemen now supported, and the actual operation in producing what one of our contemporaries has so admirably termed the "35-cent dollar." This summary defines a condition which should claim early and earnest attention of legislative committees in the states as well as the cities. We have learned much of economic production in recent years. Scientific management of business methods in factories, manufacturing plants and on the farm have claimed the attention of our most able economists and suggested reforms in legislation as well as private business. These have all been aimed at increasing the efficiency of the individual in contributing to total production. We have specialized in securing maximum output from individual effort, with the individual acting as a mere cog in the machine controlled and directed by other hands. So well have we succeeded that production is reaching new records with each succeeding year, and the wage scale is remaining stationary or being reduced until, as the article in question shows, 90 percent of the individuals are receiving less than $3 per day, and over half of this wage must be spent in purchase of food products. Is it not time that attention was given to an equalization of the profits from production so that the individual may reap a larger return from his effort? The market problem is nation wide in its application. It touches every class in the country as well as the city, and its solution depends upon intelligent co-operation of all classes in the removal of present abuses. The facts brought out by Dr. King are not new to the farmers. They have felt the drain of the middleman system for years. They are making efforts in some centers to overcome the difficulties by co-operation and direct selling. They are working on the right line, but they need and deserve the co-operation of the cities and remedial laws. The greatest "uplift" movement which our city friends could launch would be a complete revolution of this market system, and the effects of such a revolution would result in an uplift to the city as well as the country.

ECONOMY IN FEEDING

As food prices advance and market regulations become more exacting, the eastern milk producers are finding their margin of profit reduced. Figures on average cost of production of market milk show a very narrow possible profit at present prices. It is conceded that many are actually losing money, while the great bulk of producers are only breaking even. The few who are making a profit are the few who have given careful study and painstaking care to the management of their herds. The two alternatives held out to milk producers to increase profits are improvement of the herd thru the introduction of purebred animals and more economical feeding. It is easy to write and talk of herd improvement, of increasing average production from 6,000 to 10,000 pounds and up per cow per year thru better breeding, but only those who have tried it realize the real difficulties of accomplishing it. Better breeding is a safe solution of the problem of more economical production, but it is a solution which will require time and skill in its operation. Another means always at hand and more easily adopted is a system of economical feeding. In this issue appears the third instalment of a series of articles on feeding. The complete series is a thoro discussion of the selection and mixing of feeds to obtain the best results at the lowest cost. It represents years of investigation and study. It condenses the best thought of a large group of practical and scientific feeders, and it is a reliable guide to the best practice in feeding. It is not expected that the reader will master all of the details of selecting and compounding feeds at one reading of these articles. The series should be preserved for careful study. The dairyman who is not willing to spend a few hours in absorbing the information thus given, and in learning to compound his dairy feeds to give him greatest profits is not apt to be willing to adopt any of the more expensive practices to make his business a success. The Storrs Experiment Station of Connecticut has spent years in attempting to increase profits from a dairy herd by better breeding and better feeding. After some six or seven years of continuous effort it admits that reforms in feeding have given the greatest benefits. You can buy a purebred sire for your herd at from one to several hundred dollars, and if you have made a good selection and handle him well, he will be worth all you have paid for him. You can master the principles of better feeding at the expense of a few hours of careful study, and make the information worth as much to you as the purebred sire. If you do neither, do not blame the markets for the lack of profits in the milk business.

RURAL CARRIERS AND PARCEL POST

The suggestion as to increasing the use of postal equipment, which appeared in our issue of March 29, has called out a protest from rural mail carriers. Under an illustration of a common type of rural mail delivery wagon we published the following legend: "One of the 42,200 rural delivery outfits maintained by Uncle Sam. The average daily load of mail per wagon has been estimated at less than 50 pounds. At least 500 pounds of parcel post mail per wagon per day might be added with practically no cost added." In reply we have received the following communication with request that we publish:

> "On behalf of the eight rural letter carriers from this office, I wish to enter a protest against the legend appended to the first page illustration in your issue of March 28th. This is very misleading, and if taken seriously by your readers would be liable to retard our efforts toward an increase of salary and allowance for equipment, which we so greatly need. Do you think your publishers would be willing to furnish team power enough to guarantee the delivery, daily for a year of 500 pounds of mail matter, at $34.00 per month, in a wagon as in the illustration? (This is about what it costs us now.) How many hours extra a day do you think a man would have to work to deliver 500 pounds over a route, 28 4/5 miles, serving 280 families and about 250 boxes, when it takes him 6 or 7 hours to deliver 100 to 125 pounds? Are you not aware that our equipments are not maintained by Uncle Sam, but that we have to furnish and keep them up out of our $1,100, or less, yearly salary? Would it be possible to get your postmaster to allow 500 pounds of parcel post matter to be laid aside, then get a wagon such as in illustration, which would be capable of carrying 800 pounds actual weight, so you could demonstrate to your own satisfaction whether your assertion is correct or not? Since the last counting and weighing by rural carriers, in our office, the mails have increased at least one-third, and not many days hence the rural men all over this country will be carrying weight enough to more than fill the space capacity of their wagons; and I dare say, from present indications, that by next Christmas our present equipment will not be adequate. I am sure that I may safely assert that 150 pounds of ordinary mail matter will tax the utmost space capacity of any wagon now in use by rural carriers. Therefore we ask you to kindly give this letter space in your columns, or make a statement correcting the impression which the published statement would naturally leave in the minds of your readers."
>
> Very respectfully,
> JOHN H. SWANK.
> Lancaster, R. L. C. No. 6.

We are glad to give space to this letter and give our readers an opportunity to consider this protest. We are well aware of the fact that many rural mail carriers feel that they are not sufficiently paid for the services they render, and in many cases they are just in their claims. But we do believe that they should be the last to oppose extension and improvement of the mail service. Without minimizing the justice of their demands in any way, it must be admitted that there is usually plenty of competition for their positions at present salaries and with full knowledge of the present duties of their jobs. All salaries, even in competitive government positions, are based largely upon the availability of qualified applicants. Bearing this in mind, improvement of service is the surest means to increase of salaries. Ex-Postmaster Hitchcock, in his report for 1909, showed that the average load of the rural carriers was not over 25 pounds, and on no route did the loads exceed 50 pounds. His opinion was that the outfits in use were well able to carry 125 pounds daily. While this opinion was based upon conditions four years ago, there has been little to increase the amount of mail carried, except the recently adopted parcel post, and the figures given may be accepted as fairly accurate up to January 1 of this year. Upon this basis, the number of pounds of mail handled could scarcely be taken as a fair basis of compensation, as 25 pounds per day should not be objectionable as measuring a day's work. The justness of the wage scale must then be based upon the time required and the distance traveled. With the increase resulting under the parcel post, the distance remains the same, and only the weight and time vary. According to our correspondent's letter, his time is now from 6 to 7 hours per day in serving 250 boxes. As his mileage would not be increased, the additional work resulting from parcel post traffic should not lengthen his working day more than two hours, making from 8 to 9 hours a day, which may be a bit long for a government employe, but considerably shorter than the average day for all other classes. Our correspondent asserts that the government does not maintain the present equipment, but as salary is based on service and equipment, the government meets that expense as directly as tho it actually purchased and maintained the horses and wagons. And if it has been maintaining a wagon of 150 pounds capacity to handle 50 pounds load in the past, it has been extravagant in its equipment. With present parcel post service the wagons will approach more nearly their maximum capacity, with little danger of exceeding it at present postage rates. When rates are lowered there will be need for enlarged equipment and increased salaries, and there can be little doubt that both demands will be met. The rural carriers can best insure an increase in their salaries by helping to improve the services they render.

DIRECT ELECTION OF SENATORS

The Pennsylvania legislature swung into line with 34 other states in support of popular demand when it ratified the amendment providing for direct election of United States Senators on April 2. Only one more state is necessary to make this amendment a part of the federal constitution. The legislatures of Connecticut and Rhode Island are now in session, and it is expected that the former will take favorable action on the measure at an early date. Florida selects its Senators at primaries, and its legislature meets this week and will no doubt ratify the amendment, making its adoption certain. This is one of the reforms classed with the so-called progressive policies longest in demand. The character of the men chosen by direct election will help to indicate the fitness of the American people to legislate for themselves in the initiative, referendum and recall. There may be mistakes made under the new system, but if the new law is accompanied by proper safeguards of the ballot so that every election will be an honest representation of the will of the people, there will be little danger of a mistake remaining in office more than one term. The danger in the old system was not so much the harm that might come from the first term of an undesirable official, but rather that official becoming so firmly entrenched in office and power that he felt himself independent of the people's will. The direct election will give an effectual recall every six years, and public opinion will be a check on official performance. If the amendment becomes a law, as it is almost certain to, Pennsylvania will have an early opportunity to exercise its new power. Senator Penrose's term expires next year, and it is a safe prediction that his successor will be elected by the people next November.

PENNSYLVANIA LEGISLATIVE NEWS

The Highway Situation.—Altho the highway legislation situation is more or less muddled there is little doubt but that the question of road construction will be put up to the people in the end. Practically all of the road legislation pending has this in view, however much men may differ in regard to the proposed amendment to allow the state to borrow $50,000,000. The amendment for the bond issue, altho vigorously fought, will doubtless go before the voters of the state this fall. It has been before the legislature for over two months and a subject of general discussion for a year and a half. To show how all of the highway legislation is contingent upon this measure, it only remains to note the fact that members are voting on bills to establish a method whereby the state shall apportion money for highway construction and maintenance, that the township road aid bills are drawn so that the amount can be reduced if the bond amendment fails to pass, that the state aid appropriation is more or less contingent upon the action on the same measure, and that there are dozens of bills in hand for adding certain routes to the system established in 1911. Thus it will be seen that the whole question of policy of the state in regard to roads is to be determined this year, and no matter what party would be in power there would be more or less opposition to the general plan proposed. So much is being heard about the referendum this year that legislators appear to consider that it would be the method to obtain an expression of popular will.

Education.—It is fortunate that there are men in the legislature who are giving attention to the important subject of education despite the clash over roads, election reforms, woman and child labor, employers' liability, taxation and public service commission bills. So many amendments to the school code have been proposed that the law of 1911 would be a thing of shreds and patches if they were to be enacted. Only a few of the bills relative to the code have gotten out of committees, and only those of general importance have been considered. One of these would restore the abatement allowed for payment of taxes. The vocational educational bill, which also includes agricultural training, is making progress, and it is an administration policy to establish it and to see that a suitable appropriation for its inauguration is made. The house is also to vote this week on a bill to provide aid for townships and other districts too poor in resources to provide the money for the minimum term. The state appropriation for education is to be unchanged.

Assessments.—At this stage it appears to be improbable that there will be any change in the system of making assessments of real estate. Bills are pending for the establishment of a state board of assessment to have supervision over all county, city or borough assessments, but indications are that there will be little done. Without discussing the merits of such a system or its possible demerits because of state control, it might be said that it appeared too late in the session, and the fight was not started soon enough for it to be effective. Other questions are now monopolizing attention and adjournment dates are being talked of.

Referendum.—The initiative and referendum bills are to the front in the house at present, bills to provide the system for second and third-class cities, boroughs and townships being on the calendars, while there are also resolutions proposing such amendments to the constitution on state propositions. The fate of these bills rests with the senate, which has shown a disposition to insist upon its full rights as a co-ordinate branch of the government. Indications are that there will not be changes in the system of government of boroughs or townships at least.

Taxation Uncertain.—The question of revision of the state taxation laws appears to be rather uncertain. So many measures aimed at corporations have appeared, aside from the general regulatory legislation, such as employers' liability, minimum wage, child labor and other objects, that they have become seriously alarmed and are disposed to make fights against bills which would revolutionize many matters established for years. Under this condition anything might happen in taxation.

Semi-monthly Pay.—In addition to the minimum wage proposition, which would upset the present apprentice system and force a standard of wages for mills, factories and even domestic labor of women and minors, the semi-monthly pay bill, which, if it becomes a law, as is very likely, will require every person working for wages to be paid every two weeks if demanded.

Milk Transportation Bill.—Dairy farmers as well as railroads are showing considerable interest in the Campbell bill to provide that milk, after being cooled on the farm or in the dairy, must be held at 60 degrees of temperature until it reaches the consumer. This bill places all of the responsibility on the shipper, whether he be farmer, dairyman or railroadman. It would be far reaching in its consequences.

Food Laws.—The pure food laws, which are undergoing their biennial amendment, have gotten somewhat into a snarl and a special sub-committee is about to make some changes which will doubtless cause strife in the legislative bodies. As amended recently the food bill contained a clause which would have annulled the enforcement against wholesalers handling goods from other states. It is now planned to so change the law that the retail man may be exempted from prosecution if he secures a guarantee from the wholesaler or manufacturer. There is pending another bill which would change the whole system of taking samples of milk or foods for inspection. This would provide that when a sample is taken the person from whom bought shall have the right of a similar sample and to have a chemist analyze it, producing the statement of the defence's chemist in court when a hearing is held. This would reduce enforcement of food laws to a battle of experts.

Election Law Changes.—Election law changes are also snarled. The one thing certain is that the state will directly elect its United States Senator. Other changes are uncertain. So many changes are proposed, and in the midst of them numerous returns to the old systems, that the whole subject is one of confusion. The present legislature, which reflects the unusually active political conditions of last year, is probably the least suited of any in recent years to pass upon a subject of as far-reaching importance as election law changes. Such statutes are filled with opportunities to take advantage and for manipulation which in these times are eagerly sought. It is no disparagement upon the able men in the legislature when this is written, but the fact remains that everyone here is more or less affected by the political feeling in the state.

Telephone Rate Regulation.—While the State Railroad Commission was a little slow in presenting the results of its investigation into the system of telephone charges in the state, the completeness of the report and the importance of the suggestions justify it. The commission went over the rates charged by over 110 companies and has outlined a system upon a message basis, pointing out that such must ultimately do away with the flat rate. The commission found wide discrepancy in the charges and that the basis was as different as could be imagined. The rural service appeared to be run more or less upon a plan adapted to locality.

Road Work Begun.—The maintenance forces of the state highway department have started work on the repair of the highways in 15 counties, and in practically all of them work will be under way within a fortnight. In the western end hard work must be done to overcome the effects of the floods.—Hamilton, Harrisburg, Pa., April 7.

NEW JERSEY FARM NEWS

Legislation.—The following new laws are of interest to farmers: Senate Bill No. 139 fixes the open season for quail, rabbit, squirrel and certain other game from November 10 to December 15. Senate Bill No. 181 provides penalties for the selling or the offering for sale as "certified milk" any milk not produced according to methods prescribed by any duly incorporated medical commission. Assembly Bill No. 331 amends pure food act by giving to local boards of health same powers as state board of health regarding foods, etc. Senate Bill No. 202 regulates the sale of the various forms of lime used for fertilizers and provides against imposing upon farmers. Assembly Bill No. 324 requires all public auction sales to be conducted by licensed auctioneers. Assembly Bill No. 560 enables townships to raise money by taxation for the purpose of lighting public roads.

Tax Bills Defeated.—The state senate has rejected legislation looking toward the reorganization of the present system of taxation. These bills were drafted by the tax commission after an exhaustive investigation.

Exempt Farmers From Liability.—Farm laborers and domestics will be excluded from the provisions of the employers' liability act by a bill which has already passed the senate, and which was introduced by Senator Gaunt, of Gloucester County, Master of the State Grange. The bill was introduced in the interests of the farmers of South Jersey and passed without opposition.

Violet for State Flower.—The violet has been chosen as the official flower of the state. The bill was fathered by Assemblyman Carrow, of Camden, at the request of a number of civic organizations.

Damage from Cold.—Reports from the Mercer County Farm Bureau show that the cold wave, to which this state has been subject the past few days, will prove disastrous to the crops this year. The main damage will be with the peach and plum supply. Damages to other crops will be dependent upon the weather for the next few days, and unless a decided warm spell occurs all crops will suffer considerably.

Producers Organize at Mt. Holly.—Burlington County merchants and growers have organized. E. B. Fraser, of Mt. Holly, formerly of the Burlington County Exchange, has been chosen manager. The keynote of the organization is the elimination of the middleman.

Use Dynamite in Farming.—Using varying charges of dynamite, Warren County farmers have uprooted chestnut and oak trees and stumps, cleared the land of boulders and plowed a considerable portion of the ground. Such work, it has been found, can be done more expeditiously and economically by means of dynamite than with anything else. It is also being used in setting out trees. For this purpose the cost is estimated at 8 cents a tree.

Chickens by the Ton.—William Errickson, who manages the Richard Hendrickson farm, Monmouth County, sold recently to a local poultry dealer, 322 pullets and 277 capons, which weighed a few pounds over two tons. Mr. Errickson received a check for $1,097.59, which was very satisfactory, considering the care and expense involved in raising the crop.

Producing Duck Eggs.—The demand for duck eggs shows a steady increase, and Burlington County breeders are substituting Indian Runner ducks for their big flocks of Leghorn chickens. These changes have followed several seasons of experimenting, the results of which have been in favor of the former. Farmers who are growing the Indian Runner say that this bird will work a revolution in the American egg supply in the next decade, and will supplant the Leghorn fowl as the main egg supply in this country. The breeders say that unlike chickens, these ducks suffer from none of the ordinary poultry diseases, are never troubled with lice and may be housed in cheap structures. The point of most importance is that the ducks produce eggs the year round.

Princeton After Flies.—Women of Princeton have organized a campaign against the fly. They have induced the local board of health to pass an ordinance providing that all manure shall be removed from the borough at least once a week from April to October, inclusive, and the places from which it is removed shall be disinfected. Provided, however, that if the manure is effectually screened against flies, it will not have to be removed. The university is to buy the manure for its farm at $2 per load. The object of removing the manure is to do away with one of the chief breeding places of flies, and thereby greatly decrease their production. Farmers, too, should guard against flies in every possible way.

Farmers Buy Auto Truck.—Farmers in the Holmdel section of Monmouth County are making up a fund to buy a large automobile truck. The car will be used to cart produce to the shore resorts, and will be at the service of all the farmers who "chipped in" to buy it. These farmers are evidently awake to the possibilities of introducing better business methods in agriculture thru co-operation, and their act is proof that farming is becoming more and more profitable.

Potato Contest Rules.—The rules for the potato contests for the members of the boards of agriculture are as follows: (a) The area must not contain over 43,560 square feet (one acre), determined by actual measurement. (b) Contestants shall make a report to the board covering the following details: 1—The crop grown and the improvements added to the soil last year. 2—Kind of soil and depth of plowing. 3—Composition and amount of fertilizer. 4—Variety and quantity of seed. 5—Time and depth of planting. 6—Distance between seed pieces in the row and between the rows. 7—Method of cultivation. 8—Method of spraying. 9—The product shall be considered the total weight of potatoes grown on the contestant's acre. (c) There shall not be more than one contesting acre on each farm. (d) The committee reserves the right to inspect any contestant's acre at any time and to verify the weight of product.

College Visitors Named.—Governor Fielder has named the 24 visitors for the ensuing year to the state agricultural college. Several new men—all practical farmers—were appointed to succeed others not so closely identified with the soil.—D. T. H.

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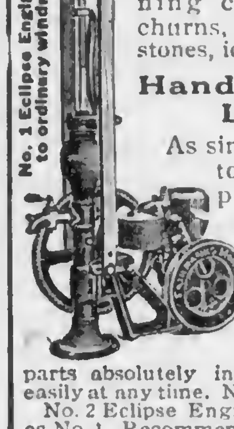
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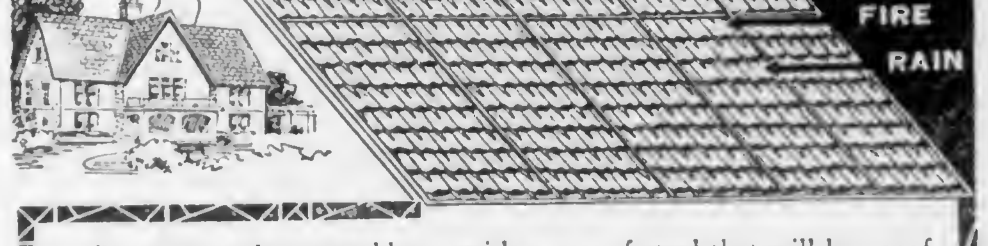

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PROFIT IN RAISING MULES

One of the most profitable industries a farmer can engage in is raising mules. One of the most essential points is to have large, heavy mares from which to produce them. The great importation of heavy stallions has made it possible for the farmers to secure just the kind of mares best adapted to the production of very valuable mules. Automobiles have partially taken the place of light driving horses, but has not materially affected the prices of the heavy breeds, and especially of mares, which are always in demand for breeding purposes. A pair of mares weighing 2,800 to 3,500 pounds will do all the work on a 100-acre farm, and raise a pair of mules that will bring, when three years old, from $400 to $600.

About 1892 three of my neighbors and myself bought a young jack. A fully developed jack, five to six years old, of good size and with written guarantee to be a vigorous, sure colt-getter cost, at that time, from $1,000 to $1,500. We took chances on a three-year-old, without any guarantee. He had never been used, and of course if he had been barren, as some of them are, he would have been a total loss. This colt was short in legs, with very heavy neck and shoulders, and with a good back. He grew to weigh 900 pounds.

MULE TEAMS READY FOR THE FIELD ON A LARGE INDIANA FARM.

It was late in the breeding season when we got him home, and he was poor and lousy, but he served about 20 mares that season and got most of them with colt. We had paid $600 for the lousy colt at the farm, and were almost ashamed to bring him home; but by breeding time next year we had a jack to be proud of and a regular government bond investment. I bought out my neighbors' interest that year and made a standing offer for colts from all mares weighing 1,200 lbs. up of $40, and jack service free. That fall some of the farmers began to think there would be no market for mules, as none had ever been raised in this county, and no buyers would come in. I bought several that fall and wintered 16 in a large barn. I filled the mangers once a day, and they ran out and in at pleasure. They had a range of 150 acres, one-half of which was timber, and during moderate weather there would be days at a time when they would not come to the barn.

The next winter I had a barn full, and about the first of February I took those coming three years old to the home barn and fed them a little ensilage once a day with a little hay and a little corn. By the middle of May they would be all shed and sleek and ready for market. I had a lot to pick from, and had no trouble to match them up. I never sold a pair at three years old for less than $400, and several of the larger pairs brought $500. This gave me a pointer on raising mules. I had never sold hay or anything you could convert into manure. I had fed hundreds of steers, usually turned them off at three years old. A few years ago you had to have a very good steer to bring $50. I found that I could raise a mule to three years fully as cheaply as I could a steer, and I had no trouble to get $200 for the mule.

The greatest difficulty I found in breeding mules was to get all large mares, altho I have seen 1,000 pound mares raise mules that weighed 1,100 pounds. But from mares weighing from 1,400 to 1,800 pounds you are certain of a class of mules that will bring very satisfactory prices. A light pair of well-matched mules will always sell, but the large heavy pairs are more in demand and always bring better prices.—Wm. R. McGill, Crawford Co., Pa.

KEEPING SHEEP IN THE EAST

In an address on "Can Mutton Be Produced Profitably by the Average Farmer in the Eastern States?" Mr. J. Campbell, Woodville, Ontario, Canada, said that he knew that the sheep industry was on the down grade. In the last few years the farmers have cut down the number of their sheep one-half, yet sheep products have increased in value. The question for the East to consider is, can you produce mutton to largely take the place of the meat you are buying from the West? You farmers say that the stone wall fences and dogs are the chief obstacles in keeping sheep. I want to ask you if you ever knew a woman to give up chickens because of hawks, etc? If you are discouraged more easily than your wife, you are chicken hearted. Your problem of dogs and fences can be solved by using a portable woven-wire fence. The barbed wire fence is passing away.

Again, you say sheep are hard on grass. The woven wire fence will also solve this problem, for if so fenced they will not have the run of the farm. We must go at this question in a business-like way, the same as do your most successful dairymen. We should adapt animal industries to our taste and to the condition of our farm and markets. If you like sheep, there were never brighter prospects for the sheep industry. The quality of our flocks is being increased, so we have the best animals for economical production of wool and mutton, and in increasing prices. I do not believe that lambs over 10 months old should be marketed. The difficulty of getting skilled labor on your farms is one good reason for keeping sheep.

A few sheep will run with the cows without injuring pastures, but the number should be small. It is better to keep the dairy and sheep business separate. The steeper hillsides not suitable for dairy farming may be the place for the flock of sheep, if you supplement the pasture with forage crops. The sheep will destroy the weeds on your farm, and besides they will enrich it. I would prefer first-class grade sheep to third-class purebred, but this does not mean that I do not appreciate purebred sheep. Get the best you can, and work to get at the top in breeding sheep. We have learned that a small flock on the farm will do better than a large flock, so I keep several flocks on my farm.

I can show a profit on the cost of feed of 46 percent, and the manure offsets the cost of labor. Sheep can be kept with less labor for the investment than any other animal. The work is so light that the young boys and girls can help. I can handle 100 sheep with one half the labor required for the equivalent in cows. I estimate five sheep to one cow. You can gradually enrich your farm by corraling the sheep in different places on it. There is no business so uniform in its returns as raising sheep. I have been in the sheep business for many years, and I have never known a year when I did not realize a good profit.

My plan of feeding sheep is to supplement the pastures with green forage crops, as oats and peas, clover and alfalfa, and cut sweet turnips. Plan to have your lambs dropped when the first green grass comes in the spring. Do not let your lambs stand still. It costs too much to let an animal stand still, for it is consuming food for which you get no profit.—W. H. J.

STATE HOGS DIE FROM CHOLERA

Hog cholera of mysterious origin, as mysterious as the history of that disease invariably is, has recently caused the state of New Jersey the loss of several thousand dollars' worth of fine hogs. The animals were the pork supply of three state institutions in widely separated sections of the state. In not one of the places could any satisfactory explanation be found for the appearance of the plague. In one South Jersey institution, all of the hogs were killed to avoid total loss by the infection. In another institution several were killed and their carcasses disposed of by careful destruction.

It was then decided to make an effort to save the remaining members of the herd by treatment with cholera vaccine. The cost of serum amounts to about $1.50 for each hog treated, but in this instance it was found to be well worth the expense and trouble, as it saved all of the herd which had been isolated as soon as the first of the hogs were found to be suffering from disease. The serum treatment was advocated for the hogs for the recent outbreak at the State Hospital for the Insane, but there were differences of opinion in the matter, and under the direction of the State Board of Health it was finally decided to kill the entire herd. The number finally killed was between 150 and 200, and the value of the hogs was about $3,000.

Every possible investigation has been made to ascertain the source of the disease, but it has been without result. No new hogs had been acquired by the asylum farm management since early last May, and it is known that those which joined the herd at that time were in a healthy condition, as the period of incubation for the disease is from two to 20 days, and no sign of sickness appeared until a short time ago. While there is said to be more or less hog cholera in New Jersey all the time, there has been rather more than usual during the last five or six months, the disease appearing in various sections without warning, and leaving no trace by which it could be run to its source. The State Board of Health has invariably advised immediate killing of the hogs which show signs of the disease, and the destruction of the carcasses in such a manner as to make certain that they will not be the cause of additional infection. Recently, however, there has been recourse to the serum treatment, and, so far as is known, the results have been generally good.—D. T. Hendrickson, Monmouth Co., N. J.

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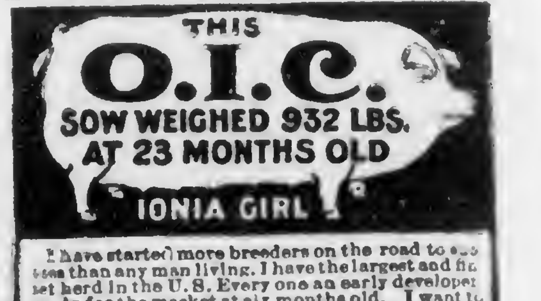

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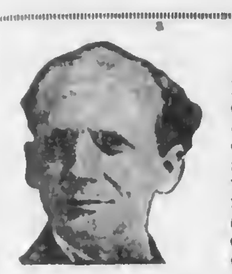


This department is conducted by R. P. Kester, Lecturer of Pennsylvania State Grange. Notes, queries, comments and news of grange work are invited from readers. Obituary notes and news of purely local interest can not be used. Address all communications for this department to R. P. Kester, Grampian, Pa.

EDITOR'S NOTES AND COMMENTS

"Do not worry; eat three square meals a day; say your prayers; be courteous to your creditors; keep your digestion good; exercise; go slow and go easy; maybe there are other things that your special case requires to make you happy, but these, my friend, I reckon will give you a good lift."—Lincoln.

A Pomona Grange was organized in Lawrence County, Pa., on March 29th. The attendance at the meeting held for the purpose in New Castle was good, considering the deterent influence of the disastrous flood in that section of the country. It certainly was a live bunch of grangers, and this new county organization can be counted on to give an added impetus to the already good grange activity in that county.

The farm papers as a class can be relied on usually to stand loyally by the cause they represent. Once in a while tho we find a traitorous note, a veiled innuendo or an editorial slap. When such appear against the farmers' honest endeavors or their organizations, the editors should be made to feel our disapproval.

The grange has always stood for the continued development of the Agricultural College. Agriculture has been greatly helped by the teachings and findings of these institutions. With the extreme demands being made upon the legislature for appropriations, it is no time now for the friends of agricultural education to be inactive.

A visit in the interests of the grange by the editor of this department to Bucks County, Pa., revealed a most encouraging condition there. The new granges bear evidences of life and prosperity that might well be emulated by many an older grange community.

Tyro Hall Grange No. 1513, celebrated its first anniversary on March 26th. Altho it was a dark and rainy night, the large and well-lighted hall was well filled and an excellent program was rendered. Beginning a year ago with barely enough to organize, they now have a membership of 95, and have just purchased a full court robe and equipment. Much may be expected from this grange.

Penn's Manor Grange No. 1539, organized in September last with only enough to begin with, has now considerably over 100 members. A class of 17 was initiated at one time. This grange meets in an old Friends' meeting house, standing where one stood in which William Penn went to meeting.

However prosperous the new granges are, some of the old ones are also active. Pineville No. 507 has lately added 21 new members and is very much alive.

A FEW TIMELY QUESTIONS

The following interesting letter, with questions and comments, was received by a certain speaker in Pennsylvania after he had delivered an address. The letter is sufficiently self-explanatory and does not need any quotations from the address referred to:

"My Dear Sir.—Pardon my liberty in asking a few questions for information, hoping that you will give this the same publicity as your statement last night, when, in your most interesting and instructive address, you mentioned the pernicious cigarette habit among boys; when you called the Ladies' Aid Society from their lethargy and gossiping to get busy after the delinquent officer who perjures himself four times a year before the court. Please give title of such officer and his duties in the community.

Who is responsible that such person is an officer, or how does he get the job? How to get busy after such officer, also some information on how to enforce the anti-cigarette law? How or why are women called upon to enforce municipal and state laws which they are not responsible for? How or why are women of the Ladies' Aid Society expected to devise plans and methods to cater to men's stomachs and tickle their appetites in order to get the where-with-all to cancel church debts which the women are not responsible for? Until women are emancipated to enjoy full suffrage, they will continue to ask questions, indulge in a little "gossip," which is but an outward expression of the mind yearning after more knowledge, and a craving desire of the soul to reach out after a wider and more comprehensive knowledge of facts, which is a born instinct of both sexes inherited from our fathers as well as our mothers. Very cordially,
AN INTERESTED MEMBER OF THE LADIES' AID SOCIETY."

GOOD ROADS IN NEW YORK

Since the subject of building good roads is such a live one with the people of Pennsylvania at this time, and since New York's plan is so frequently referred to as an example, both model and horrible, the following extract from the annual address of State Master Vary, of the New York State Grange, as reported in the Grange Review, may be interesting:

"On the important question of good roads he remarked that while we are in favor of good roads and plenty of them, we are opposed to the system that has been very much in vogue for the past few years of building very costly roads that do not stand the wear and tear of heavy traffic. We believe that good and substantial highways may be built at much less than the contract prices of many of the so-called state roads. It appears to us that too large a proportion of the funds appropriated for highway purposes is expended in unnecessary preliminaries and useless and expensive engineering. In most cases local engineers could do the work more cheaply and satisfactorily, having a better knowledge of climatic and soil conditions.

"In many parts of our state good and substantial roads can be builded for as many hundred dollars as thousands are now required for the more expensive boulevards. Such a policy would give thousands of people good roads at less cost. We are not antagonistic to other interests that use the highways, but we want fair play. A large part of the fifty million dollar bond issue was diverted from the purpose for which it was intended and what the people expected when they voted for the bond issue. This has been done by special legislative enactments apparently in the interests of individuals. The proceeds of those bonds have been practically all used up. It is gone and we have no remedy or redress, but possibly a lesson has been learned that will be beneficial in the future."

LARGE SEVENTH DEGREE CLASS COMING

New Hampshire is making ready for the largest seventh degree class ever initiated when the National Grange meets there next fall. In 1908 the National Grange met at Concord, N. H., at which time the class numbered 2,342, or double the number of members of ready in the order up to that time. The largest class ever initiated was at Hartford, in 1907, the number being 2,490. New Hampshire has conferred the sixth degree in the last two years on 1,452, special meetings having been held for that purpose in different sections of the state, and on over 2,500 since the National Grange last met in New England. During the 27 years that the seventh degree has been conferred by the Priests of Demeter, 16,912 Patrons have become members of the Assembly.—J. W. Darrow.

McSPARRAN'S GRANGE NOTES

Why Bond the State?

Whatever may be the reason back of their action, the fact remains that the present administration at Harrisburg seem extremely anxious to bond our state for the building of roads. When the committee of farmers from the grange went to see the Governor about appointing a representative on the commission that is going abroad to study rural credits, he showed an unfriendly spirit and immediately launched out on a defense of Bigelow and the highway department. Now that, to us, seemed to "let the cat out of the bag." It is true that the grange has done some very plain talking on the subject of road building, and will no doubt continue to speak out on public questions as occasion may arise, but does it not seem strange that the chief executive of the state should lose his temper because a portion of the citizenship pointed out a defect in their government and asked for a remedy of the defect? Rather, if the Governor had the best interests of the state at heart would he not be anxious to know the facts if a department was not well conducted, in order that such changes would be brought about as would make that department more acceptable and efficient. But instead, Mr. Tener accepts the responsibility for the highway department and insists that the people give to that department, at the earliest possible moment, the chance to expend $50,000,000, not of revenue but of borrowed money.

Now there is no doubt that the highway department is highly inefficient. It is not necessary to state in what way, because the facts are known to every well-informed person in the state, including the present administration at Harrisburg. It is also true that the present status of legislation on the road question is also in a chaotic condition. On the one hand we have the dirt-road law, calling for 50 cents for every dollar raised by the townships for dirt roads, and not enough appropriation to pay the debt. On the other hand the Sproul road law, with abundant provision as to appropriation but no system of roads that is either scientifically or financially practical. Not scientifically, because the pneumatic tire has entirely changed the requirements for what is known as a permanent road, and not financially, because the expenditure of $20,000 on a mile of public road is insane financiering.

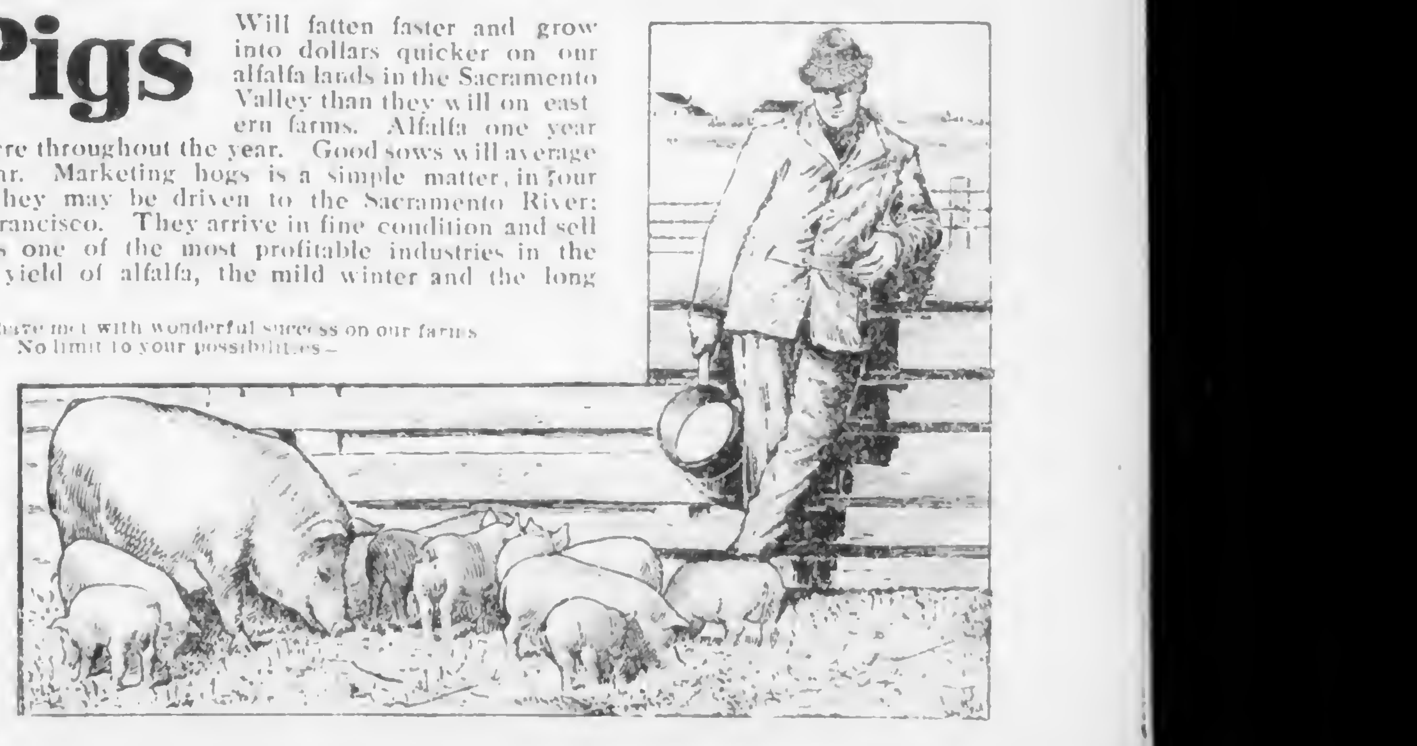
Why, then, under the circumstances, bond the state? If it had been proposed to tax the corporations a few mills for these gold-filled roads there would have been at least one good thing about it; viz, that it would have established a precedent toward an equalization of taxation. But to saddle upon a helpless future generation a burden of this kind and at the same time to break down one of the splendid precedents of our state policy, to have no debts, is, to say the least, the acme of legislative folly.

Now to bring this question right down to a logical condition: What is the real purpose of this bond issue? Not the building of permanent roads, because these state-built roads are not permanent. Not the upbuilding of the whole road system of the state, because they will not even pay what Mr. Tener himself admitted was a just debt to the townships, the appropriation under the dirt road law. Not the certainty of having money enough to finish the job if commenced, because everyone knows that $50,000,000 would be nowhere in the Sproul road scheme. Then the logical conclusion must be that this great amount of money is desired by the administration for the benefit that would come to the political organization that would have the letting of $50,000,000 worth of contracts. It can be readily seen that such an amount of patronage would very greatly stimulate the rebuilding of a political machine; but is the progressive sentiment of this state, that has been in evidence for years, going to stand idly by and allow a political machine to entrench itself behind what would eventually prove to be the most stupendous public graft in the history of our state? It will be a great deal easier to nip this thing in the beginning than it will be to break the force of it after the evil has been committed.—John A. McSparran.

NATIONAL GRANGE NOTES

National Master Wilson has been putting in some good work in Montana and Colorado. He reports these states as growing in enthusiasm and interest as to grange endeavor. It has been decided to call off organization work on April 15, under past regulations and to begin work under the new system, by which an organizer receives a stated sum for each grange organized instead of a per diem. Mr. Wilson will attend the meeting of the state grange of Oregon on the urgent invitation of its state master. An organizer is at work in Wyoming, and another will be in North Dakota when the season for work out there arrives. Calls for organizers have come from other states, but it is the National Master's plan to bring in not more than two new states a year, unless conditions are very favorable. Virginia may possibly be undertaken this year. A very late letter received from a member of the Order who is going to China to be connected with the agricultural education and development of that awakening republic, asks for a commission to organize granges in that far-off land.

The National Grange executive committee paid the funeral expenses of the late "Father" Kelley and also directed that $100 be given his daughters to relieve any present needs. The executive committee met in Albany recently and made some arrangements for the National Grange meeting at Manchester, N. H., in November. That city and the enthusiastic Patrons of New Hampshire "offer everything" to make the session one of unusual interest to the Order, and it is believed that railroad rates will be very satisfactory and that they will be announced about May 1.



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Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., April 7, 1913.

Butter receipts were light and values well maintained. Eggs were firm under a good demand for the liberal supply. Fine dressed poultry was scarce and wanted at good prices. Fruits and vegetables were about as last week.

Butter.—Western creamery, 37½c; extras, 35½@36c; firsts to seconds, 33@35c; special prints, 42@45c; near-by prints, 39c.

Cheese.—New York full cream, 17c; skims, 10@13c, according to quality.

Eggs.—Candled, 20½@22c doz.; extras, 19½c. Current receipts at $5.40 per standard case.

Poultry.—Fowls, 18@19c; old roosters, 12@12½c; spring chickens, 18@19c; ducks, 18@19c; pigeons, 25@28c pair; turkeys, 19@20c.

Dressed Poultry.—Western fowls, 19½c; roosters, 15c; chickens, 18@19c; turkeys, 23@24c.

Vegetables.—White potatoes, choice, 68@72c bu. Onions, 75c@$1.00 cwt. Cabbage, $5.00@8.00 ton. Lettuce, $1.50@3.50 basket. Cucumbers, $2.00@3.00 basket. Celery, 50@60c bch. Spinach, 75c@$1.00 bbl. Kale, 25@50c bbl. Egg plant, $1.50@2.00 box. String beans, $2.00@3.50 bu. Peas, $1@2 basket. Peppers, $1.75@2.50 carrier. Tomatoes, $1.25@1.75 carrier. Watercress, $1.50@2.00 100 bchs.

Fruit.—Apples, choice varieties, 25@75c hamper, $2.00@3.50 bbl. Cranberries, $5.00@8.50 bbl. $1.75@2.75 crate. Strawberries, 20@35c qt.

Hay and Grain.—No. 1 timothy, new, $17.00@17.50; No. 2, $14.50@15.50; No. 3 do., 12.00@13.00. No grade, $8.00@10.00. Clover, mixed, No. 1, 13.00@13.50; No. 2 do., $11.00@12.00. No. 1 tangled rye straw, $13.50@14.00; No. 1 oats straw, $10.00@10.50. Shelled corn, No. 2 yellow natural,60c; No. 3 do., 58½@59c. No. 2 red wheat, $1.02@1.03; No. 3 do., 97@98c. No. 2 white oats, 40½@41c. Standard white, 39½@40c; No. 3 white, 38½@39c.

Hides and Skins.—Steers, abattoir, 15¼@16¼c; do. country,13¼@14¼c. Cows, abattoir, 14¾@15¼c; do. country, 12½c. Bulls, abattoir, 12¼@12¼c; do. country, 11½c. Calf skins, Nos. 5 to 12 and up, $1.35@2.15; do. green, 13@14c lb.

Seeds.—Timothy, $3.15@3.25 bu.; clover, white, $25; do. crimson, $6.25; do. mammoth, $14.50; do. sweet, $13.00; do, alsike, $13.25; red top, per bu., $13.50; alfalfa, $7.00@10.00; Canada field peas, $2.35; vetch, $8.50; rye, winter, $1.35; spring, $2.25; soy beans, $3.25; barley, $2.50; buckwheat, $1.50; cowpeas, $3.00@3.25; millet, $1.90@2.75; oats, $1.20.

Coffee.—Rio, 7s, 11½c; Santos, 4s, 13½c. Mild Coffee—Cordova, 15@17c.

Provisions.—City beef, smoked and air-dried, 22@23c. Beef hams, 31@33c. Pork, family, $21.00@22.00. Hams, cured, 14½@15½c; skinned, 14¾@15¾c; smoked, 17@18c. Other hams, smoked, city cured as to brand, 17@18c. Picnic shoulders, 10@10¾c; do. smoked, 12@12½c. Bellies in pickle, 15@16c. Breakfast bacon, as to quality, 17@22c. Lard, refined, 11¾@12½c; do. in tubs, 11½@12c; do. kettle rendered, 11¾@12c. Tallow, prime city, 6¾@7c; do. country, 7c; do. dark, 5¾c; do. cakes, 7¼c.

Sugar.—Cut loaf, $5.15 cwt.; cubes, $4.60; powdered, $4.45; granulated, $4.35; standard granulated, $4.10; crystal A, $4.35.

Flour.—For 196 lbs., in wood, winter clear, new, $4.00@4.25; do. straight, new, $4.40@4.60; favorite brands, $4.85@5.25. Rye flour, Penna., $3.25@3.50.

NEW YORK PRODUCE

New York City, April 7, 1913.

Under slow receipts butter was firm. Buyers are paying a good price for choice creamery grades. Eggs are higher under light receipts. In a few days shipping from the West will be continued, at which time large quantities of eggs will be received. Dressed poultry is very scarce, altho the demand is not active and prices are only steady. Vegetables were in fair trading. New potatoes are in ample supply and lower.

Butter.—Creamery firsts to extras, 34@35½c; thirds to seconds, 31@33½c; factory, 22@25½c; state dairy, 26@34½c; packing stock, 20@21½c; process, 23@29½c.

Cheese.—Whole milk special, 16¼@17c; do. common to fancy, 11@16½c; skims, 9@13c.

Eggs.—State and near-by, 19@22c; fresh gathered, 19½@21c; mixed, 18½@20c.

Dressed Poultry.—Turkeys, dry, 19@24c; chickens, Penna., 30@40c; fowls, 15@18½c; old roosters, 14c; ducks, 15@20c; roasters, 18@22c.

Grain.—Easy. Wheat, No. 2 red, $1.11½; No. 1 Northern, $1.02½. Corn, 60½c. Oats, standard white, 40c.

Vegetables.—Potatoes, state, $1.85@2.00 per 165-lb. bag. Cabbage, Danish, $6.00@9.00 ton. Green beans, $1.00@3.50 basket. Carrots, $1.00@1.50 bag Cucumbers, $1.50@3.50 basket. Lettuce, near-by, 25@50c dozen. Squash, $1.50@2.00 bbl. Celery, $1.00@2.25 case. Horseradish, $2.00@4.00 cwt. Parsnips, 50c@$1.00 bbl. Turnips, 40@75c bbl.

Fruit.—Apples, $1.75@4.00 bbl., according to variety. Cranberries, $6.00@10.00 bbl. Strawberries, 5@25c qt.

BALTIMORE PRODUCE

Baltimore, Md., April 7, 1913.

Under a steady and active demand butter was firm thruout the week Eggs maintained steady value, and strictly fresh stock is wanted at good prices. Live poultry was steady to firm, on good grades. Undesirable stock was slow and dull. Fruits and vegetables were about as last week.

Butter.—Creamery, fancy, 38@39c; do. choice, 36@37c; prints and blocks, 37@40c. Maryland and Penna. rolls, 22@24c; prints, 21@22c. Process, 29@30c.

Cheese.—Flat, 17½c; Daisy, 18@18½c.

Eggs.—Md. and Penna., firsts, 17c; western, 17c; southern, 16c.

Live Poultry.—Hens, 17c; chickens, 17@18c; old roosters, 11c. Ducks, 17@18c. Geese, 14@15c. Guinea fowls, 30@45c each.

Dressed Poultry.—Turkeys, 20@25c; chickens, 18@20c; roosters, 10@11c; ducks, 17@22c; geese, 15@16c.

Vegetables.—Potatoes, white, 50@55c bu. Sweets, $2.50@3.00 bbl. Cabbage, $1.00@1.25 crate. Danish, $8.00@9.00. Onions, 20@30c bu. Lettuce, 20@35c basket. Egg plant, $2.00@2.50 crate. Peppers, $1.50@2.00 crate. Squash, $1.25@1.50 basket. Spinach, 40@50c box. Cucumbers, $2.75@3.00 basket. Beans, green, $2.50@3.00 basket. Celery, $2.00@3.00 crate. Turnips, 10@15c box. Cauliflower, $2.50@2.75 bbl. Horseradish, $1.25@1.50 box. Beets, 25@35c bu.

Fruit.—Apples, new, $2.00@3.50 bbl., 50c@$1.00 bu. Cranberries, $8.00@9.50 bbl. Strawberries, 15@25c qt.

Grain.—Wheat.—No. 2 red western, $1.09; contract, $1.09½. Corn, spot, 57½c; contract, 56½c. Oats, No. 2 white, 40½@41c; standard white, 39@39½c; No. 3 white, 38@38½c. Rye, 55@65c.

Hay and Straw.—No. 1 timothy, $16.50. No. 2 timothy, $15.00@15.50. No. 3 do., $12.00@14.00. Choice mixed, $15.00. No. 1 clover, $11.50@12.00. No. 2 do., $9.00@10.00. No. 1 tangled rye straw, $12.50@13.00. No. 1 oat straw, $9.00@10.00. No. 1 wheat straw, $8.00@8.50.

Millfeed.—Spring bran, $22.00@22.50. Middlings, flour to white, $26.00@28.00; western middlings, $22.50@23.00; city mills mids., $24.00@24.50.

WASHINGTON PRODUCE

Washington, D. C., April 7, 1913.

Eggs.—Near-by, fresh, per dozen, 17c; southern, per dozen, 17c.

Cheese.—New York, new, per pound, 18c; flat, 18c.

Butter.—Best prints, per pound, 39c; tub, 38c; process, 29@30c; undergrades, 25c.

Live Poultry.—Hens, per lb., 18c; roosters, 10c; springers, 35@40c; turkeys, 20@22c; geese, live, 12@15c; ducks, 18@20c.

Vegetables.—Potatoes, bbl., $1.25@1.50; 50@70c bu. Onions, 50@75c per 100-lb. bag. Lettuce, per bas., $1.25@3.00. Beans, $1.50@3.00 basket. Peppers, per crate, $1.00@1.50. Egg plants, per box, $2.00@2.50. Squash, per bbl., $1.50@2.25. Beets, $1.50@2.00 per 100 bchs. Mushrooms, per lb., 25@40c. Carrots, 1½@2½c bch. Cabbage, $1.00@1.50 crate. Radishes, 50c@$1.00 per 100. Cauliflower, $1.25@1.75 crate. Apples, $1.50@4.00 bbl.

BUFFALO PRODUCE

Buffalo, N. Y., April 7, 1913.

Butter.—Weak. Creamery choice, 36@37c; choice dairy, 35@36c.

Cheese.—Quiet and steady. Fancy, 17½c; good, 16½@17c.

Eggs.—Weak. State, fresh, 20@21c; mixed, 19c; western, 18@19c.

Dressed Poultry.—Firm. Turkeys, per lb., 23@26c; fowls, fancy, 17@20c; chickens, 16@20c; old roosters, 13@14c; ducks, 21@24c; geese, 17@18c.

Live Poultry.—Firm. Chickens, 17@20c; ducks, 16@18c; geese, 15@17c; turkeys, 22@23c.

Vegetables.—Potatoes, firm. Homegrown, 58@60c bu. Cabbage, 25@75c bbl. Onions, 60@70c bu. Beans, green, $1.40@1.60 hamp. Turnips, 75@80c bbl. Celery, 50@75c doz. Lettuce, 40@70c.

Beans.—Quiet, steady. Marrow, fancy, $3.30@3.40; medium, $2.40@2.45; red kidneys, $2.00@2.50.

Fruits.—Apples, $2.50@3.25 bbl.; 50@75c bu.

Honey.—Firm. No. 1 fancy, 17c; No. 2 new, 13@15c; dark, 12c.

Hay.—Quiet. Timothy, choice, on track, $17.00@17.50; No. 2 do., $15.50@16.00; light mixed, No. 1, $13.00@14.00; rye straw, $10.00; oat and wheat straw, $9.00@9.50.

Feed.—Dull. Spring bran, $19.00 ton. Standard mids., $19.50. Cornmeal, $22.00. Gluten, $23.00. Hominy, $22.00. Oilmeal, $27.75. Cottonseed meal, $29.50.

YORK PRODUCE MARKET

York, Pa., April 7, 1913.

The attendance at the city markets was normal thruout last week. Prices ruled steady with but few changes. Eggs are tending upward, while butter remains firm.

Butter.—Country, 30@34c; separator, 33@35c. Milk, 6c per qt.

Eggs.—16@18c.

Poultry.—Hens, 15@16c. Dressed poultry, 45@90c each.

Vegetables.—Potatoes, 10c half peck; 50@60c bu.; cabbage, 2@6c each; lettuce, 5@10c; beets, 3@5c bunch, 10c per ½ pk.; radishes, 2@5c; turnips, 6@9c per ½ pk.; onions, 2@3c bunch, 15c per ½ pk.; Lima beans, 12c qt.; soup beans, 9c qt.; sweet potatoes, 10c per ½ peck; spinach, 10c per ½ peck; parsnips, 10c per ½ peck; sauer kraut, 5@8c qt.; lard, 14@16c lb.

Fruit.—Apples, 10@25c a half peck; strawberries, 20c box.

Retail Grain Market.—Wheat, $1.13; corn, 68c; oats, 48c; bran, $1.20 a cwt.; rye, 78c; middlings, $1.45 a cwt.

Wholesale Grain Market.—Wheat, $1.03; corn, 55c; oats, 37c; rye, 68c.

WILMINGTON PRODUCE

Wilmington, Del., April 7, 1913.

Trading on the markets during the week was normal, and prices remained at about last week's figures. Eggs are more plentiful and the demand for chickens, both live and dressed, has somewhat declined.

Fruit.—Apples, 50@75c basket; $3.00@4.50 bbl. Strawberries, 25@40c.

Vegetables.—Potatoes, 60@80c bu.; $1.75@2.00 bbl. Cabbage, 75c@$1.00 bbl.; 25c basket. Onions, 40c basket. Celery, 60@85c doz. Spinach, $1.25 bbl. Sweet potatoes, 60@75c basket; $2.50@3.25 bbl. Kale, 75c bbl. Carrots, 10c ½ pk. Lettuce, $2.00 basket.

Poultry.—Chickens, live, 16@17c; do., dressed, 20c. Ducks, 14c lb.; dressed, 18c.

Eggs.—18c.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., April 7, 1913.

Local cattle continued to supply the market in ample quantities.

	Beef Cattle	Sheep and Lambs	Hogs
Total for week	5,278	14,931	
Previous week	5,139	12,305	

Best steers	$8.75@9.00
Choice steers	8.50@8.62½
Good	8.37½@8.45
Medium steers	8.00@8.25
Common steers	7.50@7.75
Bulls	5.00@7.25
Fat cows	4.50@6.50
Thin cows	3.00@4.00
Milk cows	40.00@65.00

Veal calves are steady.

Best calves	$11.50@12.50
Good to choice do.	10.00@11.00
Medium	7.00@8.00
Common do	6.50@6.75
Thin do.	5.00@8.00

Sheep and lambs are a shade lower.

Extra wethers	$7.00@7.50
Choice wethers	6.50@7.00
Good wethers	6.00@6.50
Common to medium	3.00@5.50
Ewes, fat	5.50@6.00
Extra lambs	9.50@9.75
Good to choice do.	9.25@9.50
Common to medium	6.00@8.50

Hogs are in strong demand owing to failure to receive western supply.

City Dressed Stock—Choice classes of dressed meats are firm. Trade is normal. Steers, 11@14c; heifers, 10@13c; cows, 8@11½c. Veal calves, 14@16c; country dressed calves, 13@14½c; extra do., 15c. Sheep, 11@13c; extra wethers, 14c. Spring lambs, 16@17c. Hogs, 13¾c.

PITTSBURGH LIVE STOCK

Pittsburgh, Pa., April 7, 1913.

All grades of cattle have sold very uneven since the yards opened again after the flooded condition. Prices have been anywhere from 25 to 50 cents per cwt. higher. Receipts have been very light with scarcely enough on some days to make a market. A number of buyers have ordered cattle in western markets. There are 70 loads of cattle on sale today. The market was slow at barely steady prices on all grades.

Good to choice	$8.75@9.10
Good, 1300 to 1400 lb.	8.50@8.70
Medium to good, 1200-1300 lb.	8.35@8.60
Tidy, 1050-1150 lb.	8.35@8.50
Fair to medium, 900-1100 lb.	8.00@8.25
Common to good fat oxen	5.00@7.00
Common, 700-900 lb.	6.00@7.25
Common to good fat bulls	5.00@7.50
Common to good fat cows	4.75@7.25
Heifers, 700 to 900 lbs.	5.50@8.00
Bologna cows	4.00@4.40
Fresh cows and springers	20.00@80.00

Calves.—Receipts were 400 head. The demand was good and the market stronger.

Heavy and thin calves	$5.00@7.50
Veal calves	8.00@11.00

Hogs.—Prices of hogs ruled high all last week with light receipts. With better shipping facilities prices declined. Today's hog receipts were 20 loads. Prices were steady on heavy grades, while others were 50 cents lower.

Prime heavy	$10.25
Prime medium weights	9.65
Heavy mixed	9.50
Best heavy Yorkers	9.60
Light Yorkers	9.60
Pigs as to quality	9.80@
Common to good roughs	8.50@9.00
Stags	7.50@8.00

Both sheep and lambs have been in fair supply. Lambs have held steady, while sheep declined, wooled stock being very slow sale. Today's sheep and lamb supply consisted of 15 loads. The market was active. Sheep were steady with lambs from 25 to 40 cents per cwt. lower.

Prime wethers	$6.75@7.00
Good mixed	6.25@6.50
Fair mixed ewes and wethers	5.25@6.00
Culls and commons	3.00@4.50
Spring lambs	10.00@15.00
Good mixed	5.00@8.10

BUFFALO LIVE STOCK

Buffalo, N. Y., April 7, 1913.

Arrivals were liberal all last week and prices held fairly steady. With a fair demand at the close of the week, prices advanced slightly. Today's prices advanced 10 to 15 cents. Arrivals totaled 3,400 head.

Choice heavy steers	$8.75@9.00
Medium	8.00@8.50
Yearlings	7.25@8.25
Plain heavy	7.00@8.00
Handy butchers	7.25@8.25
Good to choice fat cows	6.25@7.00
Good to choice heifers	6.75@7.35
Butcher bulls	6.25@7.25
Feeders	6.50@7.50
Stockers	5.25@6.25
Cows and springers	30.00@85.00

Calf receipts today were 1,600 head. The heavy supply brought prices down about 50 cents per cwt.

Choice veals	$10.00@10.50
Light and thin	4.00@6.50

Trade in sheep and lambs was steady most of last week with normal fluctuation. Mixed sheep were in active demand. Today's receipts totaled 10,000 head. The market was steady to higher.

Choice lambs	$9.35@9.50
Poorer grades	6.00@6.50
Yearlings	8.50@8.75
Wethers	7.50@7.75
Ewes	8.00@8.50
Mixed	7.00@7.25

Today's hog receipts were 15,200 head. The market was stronger under good demand.

Heavies	$9.50@
Mixed and medium	9.50@9.60
Yorkers	9.60@9.65
Light Yorkers	9.60@9.65
Pigs	9.60@9.65
Stags	7.00@8.00
Roughs	8.50@8.60

NEW YORK LIVE STOCK

New York City, April 7, 1913

Cattle receipts were 2,874 head. The market is firm.

Steers	$6.25@9.75

Bulls	5.50@8.00
Cows	3.50@7.00

Dressed beef steady. Native sides, 12@14c.

Calf receipts were 675 head. The market is barely steady.

Choice veals	$10.00@11.50
Good veals	7.00@10.00
Culls	6.00@6.50
Barnyard calves	4.50@6.00
Fed calves	6.00@8.00
Westerns	3.50@5.00

Dressed calves are easier.

City-dressed veals	14@17½c
Country dressed veals	12@16c

Sheep and lamb receipts were 5,781 head. The market is higher.

Sheep	$5.25@7.25
Culls	4.00@5.00
Lambs	8.25@9.75
Yearlings	7.50@8.00

Hog receipts were 9,595 head. The market is lower at $9.00@9.75.

Roughs	$6.50

BALTIMORE LIVE STOCK

Baltimore, Md., April 7, 1913.

Beef receipts for the week were 1,325 head. The market is firm.

Steers	$5.00@8.50
Heifers	5.50@7.00
Cows	2.00@5.40
Bulls	4.50@6.75
Fresh cows	$27.50@77.50

Sheep and lamb receipts were 1,612 head. The market is steady.

Sheep	$3.75@7.00
Lambs	6.75@9.60

There were 7,377 hogs on sale during the week. Market lower and active.

Light westerns	$10.00@
Heavy to medium	9.75@9.85
Near-by	9.90@
Pigs	9.50@9.75
Roughs	8.00@8.75

Calf receipts for the week were 418 head. The market is lower, with calves at $6.00@10.25.

ELGIN BUTTER QUOTATION

Elgin, Ill., April 7, 1913.

The quotation committee of the Elgin Board of Trade this afternoon declared butter firm at 32c a pound.

NEW YORK MILK QUOTATION

The wholesale milk price is $1.71 per 40-quart can for class C; class B, $1.81.

PITTSBURGH HAY AND GRAIN

Pittsburgh, Pa., April 7, 1913.

Conditions are gradually recovering from the paralysis of last week. A few cars are arriving, and conditions are expected to be normal in a few days. No quotations at this time are possible, however, buyers being in the market only for immediate needs and paying high for the same.

NEW YORK STATE NEWS

Feed and Fertilizer Taxation.—The attempt to tax concentrated feeds and commercial fertilizers has failed. The farmers were opposed to the plan because they well understood that they would have to pay the tax in the end by paying an increased price for the fertilizer. The plan has been changed, and now the department of agriculture has asked that the annual license fee be increased, on basis of brands, from $20 to $30 a brand on commercial fertilizers, and from $25 to $30 a brand on commercial feeding stuffs. These fees are to be paid by the manufacturers, the importers or agents. There is a good possibility that the bills will pass the legislature.

Preventing Oat Smut.—The state college of agriculture is urging the farmers to treat oats that are to be used for seed with a solution of formaldehyde before sowing. It is said that the loss from smut in the state last year amounted to about 25 percent of the crop, which could have been prevented in the way suggested. The method of treatment is to spread the seed on the barn floor to a depth of about two or three inches. Sprinkle it with a solution of the formaldehyde made by diluting one pint (one pound) of the commercial 40 percent solution with 48 gallons of water, an ounce to three gallons. This will be sufficient for 50 or 60 bushels of seed. The seed should be shoveled over while the sprinkling is going on, so that every seed may be wet with the solution.

Farm Boys' Corn Contest.—The farm boys' who held an encampment at the state fair in 1911 had a contest in corn raising last year at the college of agriculture, and the following awards have been made. On Dent corn: First prize, Deane Lightfoot, Geneva, N. Y.; second, Harvey C. Brunck, Alden, N. Y. On Flint corn: First prize, Stephen B. Whittaker, Penn Yan, N. Y.; second, Robert P. Clark, Elnora, N. Y.

Highway Advisory Board Reports.—The looked for report of the advisory board appointed by the new governer has been made. Or perhaps it would be more correct to say reports, since besides the majority report, there have been eight individual reports filed with the governor. The majority report advises that not more than 1,000 miles of road construction should be attempted in any one year that specifications should be simplified so as to have a uniform interpretation; that more attention should be given to the improvement of the so-called farm or market roads and that all unconnected links should be constructed as soon as possible, and that maintenance and repair of roads should be considered quite as important as their construction. The individual reports have not as yet been made public.

Almshouse Farms.—It is now proposed to make our county poor farms do double service. First, they will be operated as before to furnish supplies for the inmates of the almshouses and sell whatever surplus there may be, and they will also be made demonstration farms for the benefit of the farmers of the county wherein they are established. If the bill passes the commissioner of agriculture will be empowered to cause an investigation of these farms to learn for what crops they are best adapted and therefore can be most profitably raised on them, and to report the results of the investigation to the superintendents of poor and the boards of supervisors of the respective counties. It is the plan to have members of the experiment station staff at Geneva, and of the faculties of the state college of agriculture and various agricultural schools of the state, to carry out this work and give public lectures and demonstrations at these farms once a year. It is said that in Wisconsin, where this plan has been adopted and tried out, that it has resulted in doubling the production of these farms, and has greatly improved farm conditions in the various counties. The establishment of farm bureaus has met with considerable success in this state already, and Commissioner of Agriculture Huson is quoted as saying that the passage of this bill, and the careful working out of its provisions, will be of great assistance in developing the usefulness of these bureaus. Not only is the Department of Agriculture in favor of the proposed law, but the state grange, as well as the state Charities Aid Association, are supporting the bill, believing that its enactment into law would have the double advantage of improving the administration of rural charities and of diffusing knowledge of farm methods and crop conditions, and at the same time increase the popular interest in the administration of our county almshouse farms.—New Yorker.

ESCAPED THE FLOOD

As telegraphic and railroad conditions become settled it becomes evident that the first reports of the flood damage in Ohio and Indiana were greatly exaggerated. The death loss was not nearly as heavy as at first reported, being finally placed at about 450. The property loss is very heavy in the aggregate, but limited to restricted areas. The first reports would indicate that entire states were affected, and in some instances business concerns have suffered thru this erroneous impression. The following is an example of such condition:

United Factories Company.—The United Factories Co., of Cleveland, Ohio, writes: The manner in which the report of loss is exaggerated is greatly affecting the business interests of Ohio concerns which have not suffered any damage by the floods. Our mail has dropped off to a very great extent, evidently thru the impression that we are not in position to care for new business. The fact is that we have not suffered at all, except from railroad delays, etc. We are doing everything we can to help those who did suffer from the disaster, but our own plant and business was not affected.

Phelph's Factories Not Touched.—The Ohio Carriage Mfg. Co., Columbus, Ohio, makers of the Split Hickory vehicles, escaped all damage from the flood. Its factories and others happily located were entirely out of reach and far removed from the troubled side of the city. Its business is progressing without interruption, and the railroads are taking prompt care of all shipments.

NOTES AND CATALOGS

Water Supply Bulletin.—This is the title of an attractive 18-page catalog issued by the Aermotor Company. The booklet is full of information on home water supply systems adaptable to farm use, with special reference to Aermotor Mill power. It describes a full line of windmills, tower tanks (both wood and metal), pumps, supplies, etc. It also gives valuable tables on sizes of mills and of pump cylinders for various depths of wells with both wood and steel pump rods. The booklet will be mailed free if you write for it to the Aermotor Company, 2510 Twelfth St., Chicago, Ill.

The Flying Dutchman Line.—The new catalog, No. 46, now being distributed by the Moline Plow Co., is a complete buyer's guide for anything in the line of soil working tools. It lists and describes a full line of plows (walking and sulky, single and gang, moldboard and disk), harrows, cultivators, drills, planters, potato diggers, stalk cutters, subsurface packers, alfalfa renovators, listers, hay tools, etc., all of the Famous Flying Dutchman Line. Prices and full descriptive matter are given. The catalog contains over 300 pages, and is fully illustrated. It is sent free upon request. Address Moline Plow Co., Dept. 108, Moline, Ill.

Jersey Cattle Club Meeting.—The annual meeting of the American Jersey Cattle Club will be held Wednesday, May 7, 1913, at 11 o'clock A. M., at the Club House, 324 West 23d St., New York City. The fifth annual banquet of club members and their guests will be held May 6, at the Hotel Manhattan, 42d St. and Madison Ave. Reception at 6:30; dinner served at 7 P. M. For full particulars, address Secretary R. M. Gow 324 West 23d St., New York City.

Aid for Princeton Farm.—It has been announced that a New Yorker, whose name has not been disclosed, has offered to finance for a period of years, without any return for his money, the Princeton Experimental Farm. Each student who wishes to stay at Princeton during the summer and work on the farm will be given a one-acre plot. This New York man will pay for the land, cost of cultivation, fertilizer, etc. The men who till the plots will be given entire freedom to raise what they please, and what they get from the produce will be theirs. The students must, in return, stand willing to do the work first on the regular farm for the regular pay of 25 cents an hour. There will be a canning factory to take care of the produce which over runs the local demand.

THE NATION'S ODE

A recent issue of the Reformed Church Messenger contains "My Country, 'Tis of Thee'' set to music composed by Mr. Ryan Rapp, of Riegelsville, Pa. "America'' has long been sung as the National Hymn, but to music of foreign origin. Mr. Rapp has supplied the music to make it literally an American production

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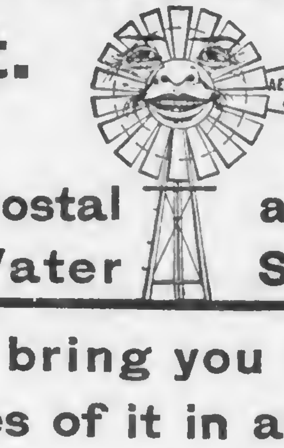

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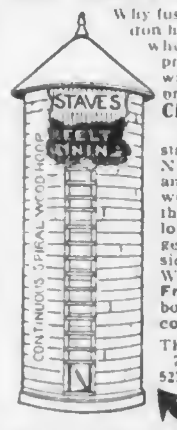

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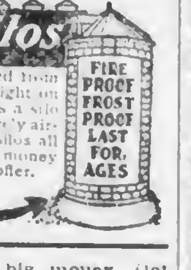

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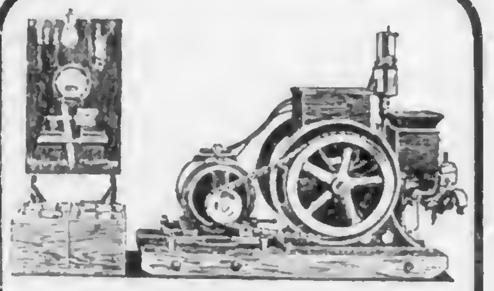

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The Daughter of David Kerr

By HARRY KING TOOTLE.

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PRECEDING CHAPTERS

Gloria Kerr, after being away from her old home at Belmont since she was a little girl, the time being spent principally in travel, surprised her father, David Kerr, by returning home unannounced. She believes that her father was a wealthy real estate merchant, and she was determined to stay in Belmont and take her place at the head of Belmont society and help build up the old family home at Locust Lawn.

CHAPTER III (Concluded)

So here Gloria was in Belmont. It was more than embarrassing. Gilbert recognized that it was tragic. Kerr never mentioned his daughter, and Belmont had almost forgotten her existence. Much that the boss had told the lawyer was news to him. Gloria Kerr, the little girl, had been allowed to slip out of his mind and he had come to regard the political leader, just as everyone else did, as a thing apart, as a power almost as impersonal as the force of gravity or the freezing of water. The easy boss was regarded as just as much a Belmont fixture as was the river which flowed past the town, and those good people who laid aside the rose colored spectacles of Belmont's laissez faire doctrine felt that it would be just as easy to remove the one as the other.

The lawyer in Gilbert now rose to the surface and he began to question Kerr just as he would a client. The girl was here. The only thing now to discuss was what to do with her.

"She can't help but learn the truth!" Gilbert exclaimed at last.

He sank back in his chair, overcome by the weight of the problem. On the wall, where he could see it, hung the picture of his own daughter, Julia, now away at school, and the bitterness of the whole thing was brought home to him all the more poignantly because he, too, was a father.

The hopelessness of Gilbert's tone when he declared Gloria would learn the truth if she remained roused Kerr to his old self. When he had entered the room he seemed crushed beyond recovery. Now he suddenly developed all the spirit, all the calm resourcefulness, which he had ever displayed when listening to the report of some political revolt which would call forth hitherto latent strength.

"She must not know," he replied with all his old dominance. "Listen to me, Amos Gilbert—that girl must be recognized. I know what people say of me, and I've abided by the verdict. I ain't been no hypocrite. I've played a man's game, and I've dealt with men. I ain't asked nothin' of your women folk, but now I do. I'm bringing Belmont a girl any of you could be proud of. She's got to be took up by the right people—I've kept her away all these years, she don't know my story, and I don't intend she shall. She's the equal of any girl in Belmont and, by God, she'll have an equal chance."

"What can I do?" asked Gilbert.

It was for this Kerr had waited. It was for this moment that he had called the past to mind. He had wanted Gilbert to have before him the many obligations under which he rested. It is true that he could have commanded, but he was too much the easy boss to issue orders where he could hold forth a glittering reward as the price of valuable services. To the ward leader the word of the boss is a fetish to be blindly worshiped. To his few leading lieutenants the command is coated with sugar which has a negotiable value. Gilbert having asked what he could do brought Kerr at once to the arrangement he had planned whereby the lawyer would profit thru the introduction of Miss Kerr to society.

"I've made bargains all my life, Amos—tonight I make one with you. Prosecuting attorney, judge, corporation counsel, with all the money you've made——"

At this Gilbert made a disparaging gesture which caused Kerr to add, "in fees—with all the money you've made, you still fall short of the riches that'll purchase real freedom. I know how you stand, and things are pretty much in the balance.

"Think what it means to your daughter, money." As he spoke he pointed to the girl's picture. "It's leisure, travel, friends abroad, an assured future! I can give them to you. I, David Kerr; and I will—on one condition. Gloria Kerr must have the place she thinks is her's in Belmont."

He paused to let the lawyer grasp the importance and the value of such an undertaking, and then disclosed the means by which the fortune was to be secured. If a man should ever pay another out of his own pocket for such a service he would be a philanthropist and not a political leader; Kerr was certainly not the former, and his life training had never caused him to separate a dollar from his own bank account when he could extract it without pain—to him—from someone else.

"For this one thing," he explained, "I give freely into your hands any franchise you may draw for the stock yards belt line railway. Disguise it as a street railway line to run down Maple Avenue. Make what bargain you like, five hundred thousand, a million dollars, it's worth it. And always remember, I'm back of you."

The possibilities of the scheme overwhelmed Gilbert. What he was to do for Kerr, even the fight for the franchise, did not enter his mind. He was busy thinking of the freedom he could purchase in so short a time. All that he had ever dreamed of could be brought to pass. Kerr, who knew almost to a dollar the financial standing of every man in Belmont, was well aware that Gilbert had been hard hit in several stock exchange transactions, so badly in the last one that he had called upon the boss for assistance. Yet he had just told Kendall that he would have nothing more to do with that kind of work. He had begun to develop a conscience—for Julia's sake, perhaps, for his own daughter's future—and here came Kerr who wanted him to go down once more into the maelstrom of shady politics for the sake of his daughter.

His gratitude for what Kerr had done for him was great enough to cause him to do anything for Kerr's daughter he could, but since the boss had put it up to him and he had back of him all the boss's power, he began to wonder why he should not accept the opportunity to make a fortune quickly. It had been held out to him as meaning leisure, travel, friends, and a roseate future for his Julia. He longed for those things for himself, no less, and here was the chance of his lifetime. He would know how to make those Chicago schemers pay well for the legal advice he would give them.

"It won't be easy," said Gilbert finally.

Kerr had won his first victory. The lawyer had surrendered.

"That's why I came to you," was the boss's answer, a reply charged with subtle flattery. Gilbert really did represent in his autocracy the best element; a smug set, perhaps, but still the best. To other lieutenants were delegated hammer and tong jobs; Gilbert was the instrument when finesse was required.

"There's a certain element, Mr. Kerr, it will be hard to win over—that wholesale clique. You have no direct dealing with the men, and—well—that is—you see, they don't know you and they might not be interested in Gloria. They're a clannish lot."

"I've fought many a fight, Amos, but never one like this. If it develops into a real fight, I still hold the whip hand." He raised his right arm menacingly, his hand clinched to a pugnacious fist. "Let any silly girl sneer at my daughter, let any ninny of a boy be uncomplimentary, and I no sooner hear of it than I'll put the screws on—and then God help 'em. They don't know me! Well, they may yet."

"When can Mrs. Gilbert meet Gloria?"

"I brought her with me—she's in the carriage."

"She came with you!"

"Yes, I told her we was going to the theater. Then we stopped here on important business."

"Bring her in. I'll call Mrs. Gilbert."

While Kerr went for his daughter, the lawyer called his wife into the library and explained the situation to her as best he could in so brief a time. He only told of Gloria's belief in her father's social importance, nothing of how he had promised to introduce her. Of course his wife would never know his wages for acting as Gloria's sponsor.

"What a remarkable thing to do!" exclaimed Mrs. Gilbert when she finally realized Gloria's position.

"I think Kerr was crazy, Julia, ever to start it, but here she is in our house and we must help carry out the deception."

"But Dr. and Mrs. Hayes?"

"Who made Hayes coroner?"

"But Mr. Wright? Will he meet David Kerr?"

"Mr. Wright's our guest and he's a gentleman, dear."

Here was something Gilbert had not thought of. Perhaps fate was playing into his hands. He hoped so anyway. David Kerr would meet on neutral ground the man who had already caused him some uneasiness. Since the boss never called on anyone, and since Wright surely would not go to see him, this was, when all was said and done, to be an important meeting.

CHAPTER IV

Gloria could not understand why she was not of most importance, and was not a little piqued at the long wait in the cold while her father was with Judge Gilbert. Her only consolation for being late to the theater was that everyone would be there to see her arrive. She knew that when she entered the box everyone would turn to look at her. A harmless little thought certainly for so pretty a girl as she. She tried to beguile the time by questioning Tom, but the driver had suddenly lost his tongue, due to Kerr's order issued privately, and talked only indifferently on indifferent topics. He was grossly ignorant concerning matters which to Miss Kerr seemed of vital importance.

At last came her father with the announcement that she was to come in to meet Judge and Mrs. Gilbert. The girl was torn with conflicting emotions, being anxious to get to the theater and at the same time desirous of seeing how many years ahead of Locust Lawn was this house which she had been invited to enter. There was no reason why she could not do both, since meeting Judge and Mrs. Gilbert could mean only a few minutes' more delay. They could then hurry to the theater, and if she was pleased with these new acquaintances she would urge them to join her. Loyal tho she was, she would welcome anyone who would be a diversion. Gloria was quick to notice a faux pas, and certain of her father's slips of grammar and lapses from punctilious etiquette had made her wish some companionship less blunt.

At the door she was met by Judge Gilbert, who welcomed her to Belmont with great cordiality. Here was a man who understood the niceties of life. Gloria's heart went out to him almost as much for the manner of his welcome as for its genuine warmth. As David Kerr had done when he had entered the house, the daughter gazed about her as she passed thru the [illegible], and all that she saw was given the stamp of her approval. It was just another step in her growing appreciation of Belmont as it really was. She noted also the familiar terms on which Judge Gilbert and her father were. She had never doubted her father, yet this was a pleasing affirmative note in her theory of Belmont life which had not been without its contradictions that day.

"I wonder if you remember Mrs. Gilbert?" said the judge as he ushered Gloria into the library. At her entrance, Mrs. Gilbert, a really gracious woman came forward to greet her.

"How do you do, Miss Gloria?" she said, "it's a pleasure to find that you've come back to Belmont."

"I'm charmed to meet you, Mrs. Gilbert. Indeed it is nice to be at home once more and I'm so glad to have you say so."

The next bit of conversation puzzled Gloria not a little. She remarked it at the time, and even thought of it once after she had returned to Locust Lawn that night.

Judge Gilbert said quietly to his wife, "Mr. Kerr, dear."

At this Mrs. Gilbert turned, bowed slightly and merely said, "Good evening, Mr. Kerr."

"How d'ye do, ma'am," replied Gloria's father, to his daughter's surprise and also somewhat to her disgust. Mrs. Gilbert's greeting had been extremely brief, but her father's had been extremely provincial. Not only was it a slipshod manner of speaking, but it had been accompanied by a bow which Gloria thought uncouth. Her father had written once or twice about Mrs. Gilbert, and Gloria, after the manner of society, was fain to enlarge upon the number.

"It's been my one wish to meet you, Mrs. Gilbert," said the girl. "I went away when I was so young that I can't honestly say that I remember you, but in his letters father spoke so often of you and of visiting here. Didn't you, father?"

Thus appealed to, Kerr was forced to reply.

"Yes—Oh, yes, Gloria, but never mind that now."

Judge Gilbert was quick to come to the rescue, and forestalled further embarrassing remarks by saying

"I suppose it will be a novelty for you, Miss Gloria—living in the country."

Gloria laughed, and her answer contained due notice of what she intended to have in the immediate future.

"Father hasn't a motor car—yet, and I don't know how I'll like it."

"You'll get used to it," was Mrs. Gilbert's comment. "Locust Lawn is lovely in summer."

"But it isn't summer yet. And it makes it inconvenient when one wants to go out in the evening. I've often wondered why father didn't have a town house. He goes out so much and must be in Belmont so late at night that to my mind a town house would be a necessity. But there he sticks in the country like an old poke."

Her idea of her father's duty to himself was so strong that she turned to him to tell him just what she thought of him. During her speech Kerr had been exceedingly uncomfortable, but there was no way to stop her.

"That's just what you are, father," Gloria asserted stoutly, "for sticking in the country when you go so much in society—an old poke."

Again Judge Gilbert came to the rescue. "You forget he doesn't go out as much as when he was younger."

"Exactly. I don't git out like I did when I was younger," Kerr repeated.

"I think everyone will have to like me very much," Gloria complained with a whimsical air of doubt, "to come 'way out to Locust Lawn to see me." She knew well that they would come, but a town apartment, something modern, loomed large in her mind. These remarks were only the pioneer work preliminary to a siege.

"I'm afraid Belmont will seem mean compared to the places you have lived," suggested Mrs. Gilbert. In the short time she had been with Gloria she had seen enough to make her certain that there were breakers ahead.

"Not at all," answered the girl. Judge Gilbert was talking earnestly with her father, and this gave her a chance to confess privately to Mrs. Gilbert.

"It seems good to me because it is home, and I can do as I please without comment. I mean to live my life to the full, just as do other girls whom I visit. Except when I've been with them, it's been a chaperon and school, school and chaperon for so long that I'm honestly glad to get into a house where no one rushes in every few minutes to see if I'm reading a French novel or writing love letters to the chauffeur."

Mrs. Gilbert laughed heartily at the martyrdom Gloria had suffered, and promised that such would not be her lot in Belmont. When Mr. Kerr joined them she went to summon her other guests.

"Judge Gilbert has been telling me, Gloria," Kerr began, "that things was quiet here just at this season. Now California——"

"Telling you!" repeated Gloria. Why did her father need to have any one tell him anything about Belmont? Then wasn't she excuse enough for all the gayety possible?

"Ain't got nothin' against California, have you?" Kerr asked, ignoring her exclamation.

"I don't know." She turned away from him, conscience-stricken at her tone of indecision. "I wanted to come home, yet——"

"Don't you like Locust Lawn, girl?"

"Yes, yes," she answered quickly. "But everything is so different from what I imagined it would be. Give me a little time to think about the California trip."

At that moment Mrs. Gilbert returned with the guests who for some little time had been entertaining themselves in the drawing-room.

Mrs. Hayes and her husband were first introduced to Gloria. While they exchanged a few pleasantries, Wright, in charge of Judge Gilbert, was meeting David Kerr. It was not until Mrs. Gilbert called him to her to present him to Miss Kerr that the editor of the Belmont News and the daughter of David Kerr came face to face.

To the surprise of the others present Gloria gave a little scream of delight and came forward with both hands outstretched to greet the young man. He no less gave evidence of his pleasure at the meeting. His face lighted up with a smile and the way he grasped both her hands betokened his happiness at seeing her again. If the others could not share their gratification, they could at least share their surprise.

"Joe Wright of all persons!" exclaimed Gloria, shaking his hands heartily, her face radiant with smiles.

"Miss Kerr! You here!" It was all he could say, but he put into it a wealth of feeling which made it impossible to mistake his meaning. He forgot David Kerr, he forgot everyone but this girl whom now he met again after so long a time.

"You're the last person I'd expect to find in Belmont."

"But you're not the last person I'd hope to find here," he replied.

Whereupon they both laughed and shook hands again.

Mrs. Gilbert was the first of the others to recover the power of speech. "You know each other!"

"Indeed we do," replied Gloria. "We traveled abroad for a time in the same party. How do you happen to be here?" she asked Wright. "Tell me all about it."

"There isn't much to tell. I live here now."

"How funny."

"I'm not apologizing for it," he suggested.

"I don't mean it that way. Belmont is my home, too. I was born here."

"Here! In Belmont!" He made no effort to conceal his surprise.

"Yes," she said proudly; "I am the daughter of David Kerr."

Had she struck him a blow full in the face she could not more have staggered him. In the joy of meeting her, Wright had forgotten everything but the pleasure of seeing her again and the memories her presence conjured up of what he called their mad old, glad old Paris days when they had been so much together. He had forgotten the sordid present with the fight to make friends for his kind of newspaper, the effort to meet the payroll, and the continuous struggle against what he knew to be the evil influences of David Kerr. David Kerr, her father! With Gloria's explanation, raised by her pride in her father almost to a boast, all this was brought back to him. He still smiled, but his heart went dead within him. The sun which had shone for him so gloriously only a minute ago was now hidden behind the blackest cloud in the heavens.

Selfish as they wished to be, for a time they were forced to join in the general conversation and satisfy the curiosity of the others concerning their previous acquaintanceship.

"When did you and Gloria meet?" Kerr asked the newspaper man.

"First on a steamer going to Europe."

"And then accidentally any number of times on the continent," added Gloria.

"There's no need now of your fearing you will be lonesome, Miss Gloria," was Mrs. Gilbert's comment. "How nice to find an old friend."

"Yes, indeed," replied Gloria, with such spirit that no one could believe she was merely saying the polite thing. "I command you to come to see me at once, Mr. Wright. I know hardly a soul in Belmont. You see I just came home this morning."

Thus within a quarter of an hour after meeting the boss of Belmont, Wright found himself invited to his home. The circumstances that had brought about the invitation he would have considered out of the range of all reason half an hour before. He knew the game too well not to understand how the easy boss works, and all unconsciously Gloria was seeking to further her father's plans.

From friendship, loyalty and a sense of obligation which one is not permitted to forget, the political leader [illegible] active co-operation where to deny it would appear base ingratitude. To keep from being placed in such a position was Wright's one aim. Consequently, to Gloria's invitation he merely murmured a polite assent, inwardly resolving to find sufficient excuses to make it impossible for him to be a visitor at Locust Lawn. Yet something within him at the same time was telling him that he must see Gloria often.

As they were now leaving, Dr. and Mrs. Hayes came to say good night to Gloria. Gilbert and Kerr found this the favorable moment to slip out of the library unobserved.

"I've told Mrs. Gilbert how sorry we are we have to be going, because I so wanted to have a little chat with you," began Mrs. Hayes. "I'll give you only a day or two to unpack before I come to call."

"Please don't wait for that to happen," urged Gloria. "I've lived in trunks so long that I'd feel like a motor without gasoline if I should take all my things out and hang them on hooks like civilized people do."

"I wonder if you could be interested in some settlement work I'm doing," continued Mrs. Hayes.

"Don't let her rope you into that, Miss Kerr," protested the doctor.

"Isn't it fashionable?" inquired Gloria cautiously.

"Not fashionable and highly insanitary," was his verdict. "A germ is no respecter of persons. My wife's liable to bring home anything from measles to socialism."

"But think of the poor, unfortunate, ignorant people," pleaded Mrs. Gilbert, who with Mrs. Hayes was interested in a mission established in a poor quarter of the town by the Presbyterian church.

"That's what I tell him," said Mrs. Hayes.

"It isn't our fault, is it?" asked Gloria. To her, settlement work was a sealed book. Slatternly women with troops of dirty, sniveling brats repelled her. Were she ever to develop any philanthropy along these lines, she was sure that the work would be carried on vicariously.

"Of course it isn't our fault," added Dr. Hayes and his wife left the li- Rose," turning to his wife, "that I have no sympathy for people who use the bath tub for a coal bin."

"I'll tell you about it some other time," said Mrs. Hayes to Gloria, not despairing of making her a worker.

"I'm afraid you'll find me hard to convert."

"Then I'll appeal to Mr. Wright to help me."

"I have no influence with her," laughed Wright.

"Not since you ran away from us in Paris," pouted Gloria.

Dr. Hayes and his wife left the library convoyed by Mrs. Gilbert.

For the first time that evening Gloria and Wright found no one to interrupt their conversation.

He was standing in front of the grate, his admiration for the girl shining honestly forth from his eyes as he watched her say the last good-byes. When the others had gone, she turned to Wright with a smile. Walking across the room to him she held out her hand, and said simply:

"You don't know how glad I am to find you here."

"Are you?" he replied, retaining her hand while he spoke. "Since that's the case I wouldn't care to be any where else in the world."

Then they sat down to talk of other days.

(To be continued.)

A brakeman retired to a farm and started to lead the simple life. Having a piece of new land to break, he hitched up a team of mules, wrapped the lines around his waist in farmer fashion and started to work. He had gone but a short distance when he saw a stump ahead and immediately began giving the railroad "stop" signal with both hands. The plow struck the stump and the brakeman went head first over the plow. Picking himself up, he ran angrily to the mules and roared: "You flop-eared scoundrels, don't you ever look back for a signal?"—Atchison Globe.

The Rough-Road Car

By R. E. Olds, Designer

After 26 years of experience, I tell you a car for the average road ought to be built like this.

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The builder must know the needed strength. Then he must add at least 50 per cent, as we do in this Reo the Fifth.

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Reo the Fifth has our new control. All the gear shifting is done with one center rod, entirely out of the way. It is done by moving this rod only three inches in each of four directions.

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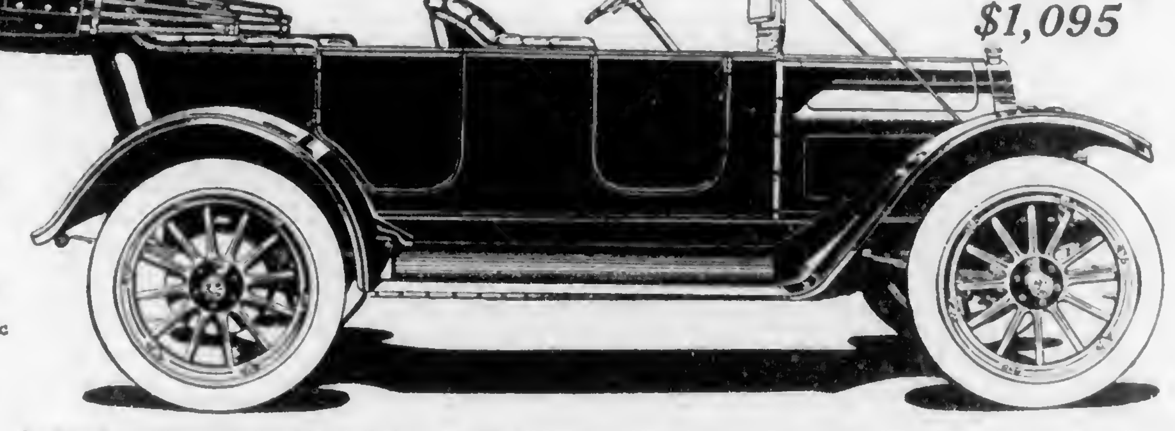

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Household

SOMETHING ABOUT THE MERINGUE

By Mary Millar Buchanan

The little concoctions of egg-white, whipped to stiffness, and lightly baked with pulp of various juicy fruits and called meringues, have much to justify their continuous use, whether in the fruit season or out of it. A good, well-made meringue is a delicious way of taking a most nourishing food, one well adapted to keep the body in excellent order. It causes the eater to partake of a goodly supply of egg albumen, the very material of which all blood corpuscles, all nerves, flesh, muscles, are made and, in addition, to eat plenty of fruit-pulp, filled with salts of all kinds and beneficient acids of many sorts. The egg white contains nitrogen, carbon, sulphur and all the different salts the blood needs.

The meringue is light. The white of egg has been so whipped as to be well permeated with air, the cause of the frothiness. The fruit has been flavored with some palatable essence, to tickle the apparatus of taste and to start the flowing of all the digestive fluids. After meats and fairly solid foods have been eaten, it is a real pleasure to turn one's attention to a meringue delicacy, and to eat this light food in the full knowledge of its strengthening powers. The sugar mingled with the fruit-pulp has its own distinctive value in body building and is the creator of vitality, energy and working power. Thus all the ingredients of a meringue work together for good to the body.

Roughly, the foundation is fruit-pulp, strengthened with some starchy material, also an energy giver and power creator. Upon this foundation an erection of massed egg-white is built, baked and so set, then, perhaps, decorated with dashes, dots, lines or small masses of whipped cream. When the whipped cream, also colored, flavored and sweetened, comes on top of any meringue, the food value is enormously increased, rich as the whole food is. For then there is an opportunity of using plenty of cream. Cream is a means of taking animal oil, contained in myriad small sacs held up in fluid exactly like blood-fluid, and produced from animal blood. Cream is as good as cod liver oil, especially to weakly people, who are tempted by a delicious meringue to take it when otherwise they might turn from it.

All sorts of matters enter into meringues nowadays. There are chocolate meringues, plain meringues, coffee, cocoanut, walnut, chestnut, apple, lemon, banana, all sorts of meringue bases. A skilled cook will ring many changes on these dainties when eggs are plentiful and fruit also, for by this means, if the house contains an invalid or delicate inmate, she will tempt the sick one into taking fine amounts of strengthening matters that are really superior to any medicines.

The yolks of eggs used can be retained for plenty of sponge cakes that will themselves aid meringues making by forming a bed for the fruit-pulp to rest on in some cases. Then the partakers get the benefit of the albumen and salts contained in the righ egg yolk also, and this is a matter for congratalation.

Nice meringues for lunches are made with as much sugar by weight as egg-whites, say 12 ounces of white sugar to twice that number of egg-whites. Or, halving the quantity, 12 whites to 6 ounces of sugar. The sugar is beaten up with the whites and the mixture dropped in fair-sized disks on oiled paper. They are baked in a rather slow oven. When set, they are done. Any nut mixture may be stirred into these, such as ground almonds, desiccated cocoanut, or preferably, finelly grated cocoanut. When done, the flat sides are covered with jam or jelly and set together. Colorings can be added, making them pink by means of carmine, or green with sap-green, or mauve with purvio, thus making a variety. The filling can be lemon-curd or any fruit jelly.

Button-like meringues made in this way can be set around the top of a sponge cake that has had its inside scooped out to be replaced with any fruit, either stewed or natural. Whipped cream, sweetened and flavored, also colored prettily, will mask the top of one of these tea dainties, also it will be dropped in delicate spots on the top of each button meringue. The meringues are sealed to the top of the cake with a little liquid jelly. Button meringues made as just stated may have a small crust baked with them. The removal of the crust leaves the cavity which will require a jam or cream filling to complete the delicacy.

For nice dinner sweets plainly made, bananas make a goodly foundation, strengthened with cornstarch or with tapioca. The cornstarch is cooked with water flavored with lemon juice, sweetened. When it is transparent the fruit-pulp is added. The whole is well mixed, then the whipped egg-whites are piled on top and the whole baked. It is done when light brown in tint. Apple-pulp makes a nice change with the banana kind. Gooseberries and strawberries assist the making of meringues in their season, and stewed pears are excellent with them.

A MERINGUE PIE.

Meringue Pie.—Mix one-third cupful of granulated sugar with three tablespoonfuls of flour, a pinch of salt, and the well-beaten yolks of two eggs. Pour over one cupful of scalded milk gradually, and cook in a double boiler for a quarter of an hour, stirring constantly until the mixture thickens, but do not allow it to boil. Allow it to cool and then add a quarter of a cupful of cream, one teaspoonful of lemon juice, and one large banana, which has been peeled, scraped and cut in thin slices. Pour into a cooked pastry case. Beat up the whites of the eggs until stiff, add two tablespoonfuls of powdered sugar and half a teaspoonful of vanilla extract. Form and decorate the top of the pie with this meringue. Place in a cool oven for a few minutes and serve.

BUTTON MERIGUES FOR DECORATIONS.

RHUBARB RELISHES

Rhubarb is one of the earliest of garden relishes, and its peculiar acid flavor is most agreeable after the long season of meats and other rich foods. With a little extra work it may easily be grown in the cellar, and the blanched prodnet thus resulting is more tender and requires less sugar than that grown in the usual manner.

Early in spring the stalks are enclosed in so tender a covering that peeling is unnecessary, the pinkish tinge which the outer skin contains giving a touch of added color to the dish. Later, when the growth becomes more rank, this covering becomes tough and should be removed. As the stalks are also more acid, a pinch of soda added when cooking will prove an economy in sugar.

Rhubarb Sauce.—Wash the stalks and cut into inch lengths. Cook until tender in enough water to cover. Sweeten to taste. Just before removing from the fire, stir in a little flour moistened with enough water to flow freely, and boil until this has thickened—a teaspoonful is enough for a quart of rhubarb.

Rhubarb Pie.—Prepare upper and lower crusts in the usual way. Fill with rhubarb cut in inch lengths, covering the bottom crust with a single layer. As the stalks become tougher in summer, peel and cook before placing in the pie. Cover generously with sugar, add two tablespoonfuls of flour, small pieces of butter and water to make sufficient juice.

Baked Rhubarb.—Wash and cut into inch lengths. Place in a baking dish, with a cupful of sugar to every pint of fruit. Dredge with flour, add enough water to keep it from cooking dry, cover closely and bake until the rhubarb is tender. Avoid stirring. It has a much richer flavor than when stewed, and each piece should be entnct and in a clear syrup.

Canning Rhubarb.—Owing to the germ-destroying acids, rhubarb may be successfully canned in cold water. Wash, peel and cut into small pieces. Pack into cans that have been thoroly sterilized, and fill to the rim with cold water, put on the covers and let stand over night. By morning the rhuarb will have taken up more or less water, leaving a vacuum. Drain off the water, and pump into the cans fresh water, continuing this until no more bubbles form. Fit on the rubbers and screw down the covers, being careful to have the cans entirely filled with the water. When ready to use, drain off this water, and the rhubarb will be found excellent for pies. It is said that green gooseberries and cranberries may be kept for years in the same way.

Those skeptical about the cold water process of canning may prefer the following, which they will feel is a safe way: Peel and slice as for pies, and place in a preserving kettle with alternate layers of sugar. Let it stand over night. In the morning there will be sufficient juice in which to cook it. Bring to a boil and can at once.

Rhubarbade.—Strain the juice from stewed rhubarb into cold water. Sweeten to taste and flavor with a little lemon if desired. This makes a pleasing variation in the hot-weather drinks.

If for any reason there is a shortage of either for a pie, a combination of equal parts of apple and rhubarb, made in the usual way for apple pie will prove satisfactory. Rhubarb and raisins, or rhubarb and elderberries, are also pleasing combinations, the acid of the one giving a sprightly flavor to the sweetness of the other.

Figs and Rhubarb.—Cook half a pound of figs in boiling water to cover until the water is nearly absorbed. Cut a pound of rhubarb into inch pieces. Alternate layers of this with figs in a baking dish, sprinkle sugar over each layer of rhubarb. Add one-quarter cup of water, and bake in slow oven until rhubarb is soft. Raisins or dates may be used in the same way.

Rhubarb Pudding.—Put some slices of buttered bread in the bottom of a pudding dish, and moisten with boiling water. Cover with a layer of rhubarb cut in small pieces, sprinkled well with sugar. Alternate bread until the dish is full. Add a few small bits of butter and bake. Serve with or without sauce.

Rhubarb and Orange Marmalade.—Wash and cut into small pieces one quart of rhubarb. Peel one-half dozen oranges, discarding the white part of the rind and shredding the yellow portion. Slice oranges and remove seeds. Put the oranges, yellow peeling and rhubarb in a pan together with a pound and a half of granulated sugar. Cook over a slow fire, stirring occasionally, until of the desired consistency. Place in glasses and leave uncovered for a day. Then seal with paraffine.

Rhubarb Pudding.—Break one egg into a teacup and fill with sweet milk or water. One cup sugar, two cups flour, ½ teaspoonful soda, 1 teacupful stewed rhubarb. Bake in moderate oven. Serve with hard sauce or whipped cream. The rhubarb combined with the soda serves to render this very light and nice. Apple sauce may be used in place of the rhubarb, the malic acid in it serving in a similar manner.

Baked rhubarb makes a delicious dressing for many of the breakfast cereals. Rhubarb jelly is a pleasing variation from the usual fruit jellies. Since the leaves and stalks may be gathered practically all season, new stems coming up to replace the old, this is really one of the most useful products of the garden, while all familiar with it will attest to its wholesome nature and to its appetizing flavor.—Bessie L. Putnam.

Lemon Buns.—Mix two ounces of ground rice with six ounces of flour, one teaspoonful of baking powder, and the grated rind of half a lemon. Rub in lightly two ounces of butter. Beat an egg in a gill (¼ pint) of milk. Stir the latter combination into the other ingredients, beat for a few minutes, put into greased biscuit tins, and bake in a quick oven for about 15 minutes.—L. I.

Swiss Cornets.—One and one-half ounces fresh butter, two yolks of eggs, two ounces flour (sifted), two tablespoonfuls powdered sugar, six drops vanilla essence; one-quarter pint of cream, three tablespoonfuls raspberry or strawberry jam, a little milk, not more than two tablespoonfuls. Cream the butter with the sugar, add by degrees the yolks of eggs and the vanilla essence. When well beaten, pour in the milk, then add the flour. Have ready a well-buttered baking sheet. Drop the mixture in dessertspoonfuls about two inches apart. Bake in a moderately heated oven. When a pale brown color appears, take out and twist quickly and carefully into cornet shapes, cutting if necessary. Put a teaspoonful and a half of jam into each, and fill up each cornet with whipped and sweetened cream.—L. I.

Albumenized Milk for Invalids.—One-half cup of milk and the white of one egg. Put the white of an egg in a tumbler, add the milk, cover tightly and shake until it is thoroly mixed.

NEW READERS

We offer Pennsylvania Farmer to new subscribers every week until January 1, 1914, for only 25 cents, or 5 for $1.00. Please tell your friends and get them to subscribe.

HOME DRESSMAKING

Good Taste in Dress.—Good taste is never conspicuous, never gaudy. It is always quiet. The wealthiest women and the best-dressed women in the big social centers are said to be the most quietly dressed. They never talk about the "latest styles," or "what is going to be worn," or "what they are wearing." When a woman is well-dressed you should not notice what she has on; you should just see the woman. It is like a picture. You should see the picture and never its frame. If the frame forces itself upon you, rather than the picture, it is wrongly framed. The same with a woman's dress. When a woman dresses in good taste, that is, quietly, always following the inconspicuous line, the happy medium when skirts tighten or sleeves widen, she follows the line of the best dressers and her clothes are not out of style. She is in good style because she is in good taste; and that is always in good style.

Selection of Material and Designing.—In the selection of material choose that which will add to rather than detract from the beauty and personal appearance of the wearer. Simplicity is considered one of the chief characteristics of a well-dressed woman. The tall, slender woman should avoid all figures and lines that would have a tendency to increase or emphasize the effect of the hight. Her choice is to plan and design to dress with much fullness. On the other hand, the short woman must of course, employ tactics just the reverse in effect. Simplicity is her safeguard. Vertical lines and stripes will add to her hight. In designing a garment, as well as selecting the material for it, there are important points to consider, two of which are the seasons of the year and the occasion for which the garment is intended.

Usually the light colors and delicate shades are more desirable in the light-weight materials for summer wear, while the darker shades are more suitable in heavy goods for winter wear. People in modest circumstances should plan and design their dresses according to their means; that is, if one can afford to have only one extra dress, plan and design the making of it so that it will be suitable for all occasions, as nearly as possible. Careful pressing is the most important part in dressmaking. A narrow iron is more preferable for pressing seams than a wide one. Open the seams in cloth dresses and dampen with a wet cloth or sponge, and press hard until thoroly dry. Do not press velvet by setting an iron on it. Lay the iron on its side, with a damp cloth over it, and open the seams and draw across the edge of the iron. Soft fabrics, such as silks, do not need dampening and should not be pressed with too hot an iron, as that leaves the silk soft and old looking.

When basting velvets, plush, etc., baste as near the edge as possible, as the basting threads often break down the pile or nap, and leave a mark. As soon as the seams are stitched, remove the bastings as soon as possible by clipping every stitch or two. Clipping the basting in this way will leave no marks, as it otherwise would if a long thread were drawn out.

How to Sponge and Shrink Woolen Goods.—Cover the ironing table smoothly with an ironing blanket, clip the selvages, and lay the material on the blanket, placing it right side down, if single fold, or either side if double fold. Have a heavy muslin cloth, a yard wide and as long as the table. Wring this out of water and lay it over the material. Pass the iron slowly over the muslin and steam it. Then remove the muslin and pass the iron over the material until it is dry. In this way sponge the whole length of the goods, moving it along the table. If the material is double fold and too heavy for the sponging to affect both sides at once, turn it over and sponge it again on the other side. When all is ready for cutting, smooth out the creases in the pattern with a warm iron.

Tracing and Cutting.—If the material is double width, do not open it, but place the pattern pieces that are marked to be cut on a lengthwise fold, with the edges so marked along the fold edge of the goods. Place the other pieces to the best advantage, the largest first and the smaller ones around them, observing the cutting lines of perforations which must run exactly lengthwise of the material. Single-fold goods must be doubled lengthwise, or crosswise, as best suits the shape of the pattern piece, arranging all the pieces before cutting, so that you will not chance to run short of material. Sometimes a change of arrangement will save considerable goods. Such materials as broadcloth, having a nap, must be cut so that the nap runs in the same direction on each piece. Figured materials should be cut with care, so that none of the figures will be upside down. Large and conspicuous figures must be watched, in order that they may appear in the same position in both fronts, both sides of back, and so on. To assure this, see that the figures are over one another, with right sides together, and then cut both sides at the same time.

Place weights on the pattern and pin along the edges. Use large sharp shears for the cutting. A tracing wheel is useful to mark perforations, when the material will retain the mark and not be damaged by the wheel. Let the wheel follow the line of perforations for darts, tucks, etc., and see that the impression is made thru both pieces of material at the same time.

When the tracing wheel is not practical, tailor's chalk can be pressed thru the perforations onto the material. As the chalk will be on one side only, use tailor's tacks to mark both sides at once. Take a double thread and baste along the chalk marks, taking two short stitches and one long one, the latter long enough to form a loop. Baste the whole line in this way and then pull the pieces apart as far as the loose threads will allow. Pass the scissors between them and cut the threads. The ends of the threads remaining in the material will mark the line.—M. Andrews, New York.

Curd Lemon Cakes.—One quart of milk, two teaspoonfuls of essence of rennet, nutmeg, five ounces of granulated sugar, three ounces of butter, three eggs, the rind of a lemon, four ounces of currants. Make the milk lukewarm, add the rennet, and leave for about two hours, when a firm curd should have been formed. Break this up with a wooden spoon and place on a cloth. Let it remain in this way all night, so that the whey drips from the solid part. Melt the butter, stir into the curd, which should be very firm and dry, add all the other ingredients, and use as a filling for small tarts.—L. I.

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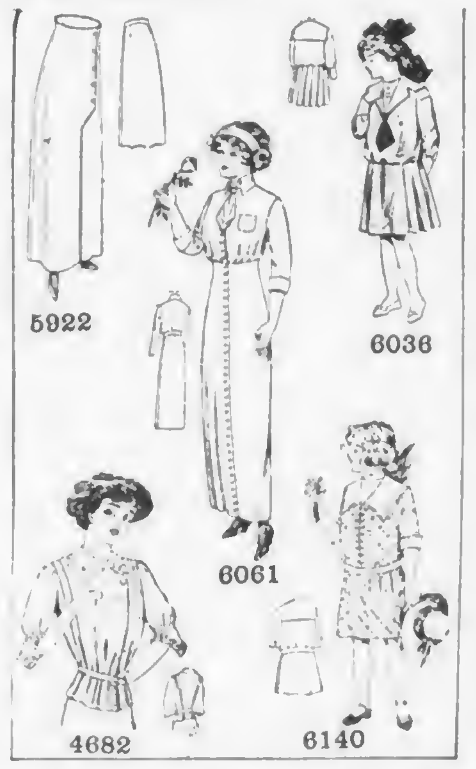

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Veterinary

(Conducted by W. C. Fair, V. S.)

(Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also name and address of writer. Initials only will be published. When reply by mail is requested, it becomes private practice, and a fee of $1 must accompany the letter. This is one of the most valuable columns of the paper and we invite readers to make use of it. Clippings from this column, when properly preserved and classified, would make one of the most valuable medical symposiums a farmer-stockman could obtain.)

Surfeit—Impure Blood.—I have a brood mare, in foal, that has a few pimples. She must itch, for she rubs whenever she has a chance. W. D. L., Elmer, N. J.—First of all, she should be well groomed twice a day, and it will do her a lot of good to be washed with soap and water, once a week. Select a mild, warm day for this washing, and you will simplify your work by using a good quality of a soft soap, such as is used in washing automobiles. Give her a tablespoonful bicarbonate of soda and a teaspoonful of Fowler's solution at a dose in feed, 2 or 3 times daily. You should salt her well and feed some roots. She should have daily exercise and her stable be well supplied with fresh air.

Ringbone.—One of my work horses has a small hard bunch on pastern which seems to be slowly enlarging. He shows no lameness. What do you recommend for this kind of a case? I must use him every day doing farm work. A. B. F., Troy, N. Y.—Apply 1 part iodine and 10 parts fresh lard to bunch, twice a week. Allow no one to talk you into using harsh remedies or you will make him sore and unfit for work.

Nasal Catarrh.—One of my 3-year-old colts has been coughing some lately. He has quite a nasty discharge coming from both nostrils, but he eats and drinks as well as ever. Will it harm him to do light farm work? M. O. T., Meadville, Pa.—It will not harm your colt to do work on the farm, if he is eating well; but if he refuses two or more meals of grain, then give him rest. Too many sick horses are worked when they are feverish and weakened in bad condition to withstand a long run of fever. Give him ½ oz. fluid extract gentian, 1 dr. tincture iron and 20 grains quinine at a dose, 3 or 4 times a day. He should be well fed and not exposed to cold rain storms.

Blind Staggers.—I have a fleshy old horse that seems to have dizzy spells. Lately he has fallen down twice. When the attack comes on he trembles all over, braces himself as if he knew what was going to happen. He is a horse which I recently purchased, and of course I do not know anything about his past history or how old he is. He is a good, willing worker, and if he is curable I want it done. A. J. H., Oil City Pa.—First of all, his being an old horse is against his recovery; however, some of the fat should be taken off him, then he will be far less apt to have vertigo or other circulatory ailments. His liver may not be active and you are, perhaps, over-feeding him, considering the work he is now doing. I have always obtained best results in the treatment and control of staggers when the animal was dieted, kept on soft, easily digested, laxative food. Never allow him to remain a day in stable, but plan to either work or let him run out. He will surely be benefited by exercise, and most of such animals do better when worked good and hard. Give him 30 grains calomel at a dose, twice a week for 3 weeks. Also give him 3 dr. potassium bromide at a dose in feed, 2 or 3 times a day.

Warbles.—Several of my cattle are troubled with grub in the back and I have thought it made them some uneasy, but they are all thriving. What can be done to rid cattle of them? K. P., Framingham, Mass.—Tell your farmer to sharpen his penknife and open skin, squeeze out grubs and kill them. Then apply boracic acid to wounds, twice a day, and apply tincture of iodine to swollen parts of back which indicates location of growing warbles, 3 times a week.

Eczema.—Quite a few of my pigs are troubled with some sort of skin trouble, and I would like to know what to put on them. The skin seems to be scurvy-like, and the pigs rub as if they were itchy. W. T. A., Latrobe, Pa.—Apply 1 part oxide of zinc and 4 parts vaseline to sore parts, once a day. Give each of them ½ teaspoonful cooking soda at a dose in feed, twice a day.

COUNTY NOTES

Montgomery Co., Md. (C.), Mar. 20.—Wet and quite warm for time of year. Live stock selling slowly. Beef, on hoof, 8c; pork, 11c; corn, $4 bbl.; wheat, $1. Poultry selling very well. Considerable hay being sold at $11@14. Quite a number of steers and sheep fattened here. Most plowing done in fall. Farmers clearing, fence building, pruning and spraying orchards.—Prof. S. D. Gray.

Potter Co., Pa. (N. C.), Mar. 18.—Weather warm last week but colder at present. Both dairy and beef cattle scarce. Pork, 11c, dressed; chickens, 12c, live wt. Hay market dull. Straw, $8 to $12 ton; potatoes, 85c cwt.; apples, 50c bu.; butter, 35c. Some farmers are busy in sugar bush; others are hauling produce to market.—Louis J. Zundel.

Frederick Co., Md. (N. C.), Mar. 19.—Weather fair; plenty of rain about the 14th. Sales in full swing; prices good on all stock. Nine-week pigs, $5.10; other hogs as high. Good brood mares, $200@300; other horses not so high. Cows as high as $120; heifers as springers as high as $76. The above are all for graded stock. Farm work in fair shape. Wheat looking fine, hiding the ground. Clover seed being sowed. Grass in good condition.—H. C. Fawley.

Warren Co., Pa. (N. W.), March 26.—Weather very wet. Floods in many places. Live stock looking well and very scarce. Good horses bringing from $200 to $300; cows, $50 to $100. Meadows looking good. Clyde Firth.

Ocean Co., N. J. (C.), Mar. 29.—Weather very changeable. Price for fresh milk cows, $70. Crops are fair. Potatoes, 70c bu.; corn, 70c; poultry, 17c lb., live weight; eggs, 20c doz. More than usual eggs set; fair amount of young chicks now. Work is well advanced. More blackberries set this year than for several years; last year's prices good. Acreage of corn will be about the same.—C. M. Rorer.

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Improves Grade

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ESTABLISHED 1880 PUBLISHED WEEKLY

VOL. 33.—No. 16. PHILADELPHIA, PA., SATURDAY, APRIL 19, 1913. 50 CENTS A YEAR.

Headle Dr. T J
Rutgers College

Preparing the Season's Seed Corn---By Charles F. Noll

Pennsylvania State College.

The farmer who follows really up-to-date methods with his corn crop, will have selected his seed corn last fall, before his corn was cut. This practice, however long it has been advocated and rational as it is, has not become a very common practice. Selection on the stalk permits one to get well-matured corn and to take it off before it can be injured by early cold snaps in the fall. This gives one also a choice of parent stalks. The ears can be taken from the stalks most nearly approaching the ideal in size, leafiness, height of ear and any desired characters.

Then, experiments have shown that if the seed ears are taken only from the stalks which grew in close competition with others, and were not favored in any other way, it is possible to increase the productiveness of the variety. When we select at husking time we unconsciously select the most of the seed which grew on plants standing alone, or which were in the best part of the field. Now a good looking seed ear is not necessarily a good one if its exceptional appearance is due to the environment under which it grew. The best seed, on the average, is that produced on plants which grew in competition with other plants, and were not favored in any way, and were still able to excel other stalks in the production of grain. Selection on the stalk at the Ohio Agricultural Experiment Station resulted in an average gain of somewhat over three bushels per acre over the yield secured from seed selected at husking time.

Next to selection on the stalk, the best practice is to select seed when the corn is husked. One would think that every farmer would practice one of these two ways of getting his seed corn, but from a canvas made a year ago among the farmers of Pennsylvania, it seems that over one-fourth of them make no effort to get seed until spring, and then took it from the crib.

Vitality in Seed.—Good vitality in seed corn is of primary importance. No matter what the variety, or the appearance of the ear, it is valueless if it will not grow. The vitality of the seed depends chiefly upon the maturity in the fall and the care given it during the winter. Seed corn should be well dried out before it is exposed to freezing weather. Even well-matured corn may contain 25 percent of moisture when cut, and if it is frozen when it has such a lot of moisture in it, its vitality will be injured. This is likely the reason that seed taken from the crib in the spring is apt to germinate poorly. The corn could not dry out before cold weather. Of the 107 lots of seed sent to the Pennsylvania Agricultural Experiment Station last spring, 31 lots taken from cribs had an average germination of 65.1 percent, while the average of the other 76 lots selected in the fall was 87.6 percent.

To dry out the seed before cold weather is the important thing. Some extra pains in this regard should be taken. The ears should be tied up with strings or laid on slats, one row of ears deep, or in some way kept apart for good ventilation. There is no better way than to fasten to rafters strips of large-meshed chicken wire and thrust the ears partly thru the meshes. Drying the corn with a little artificial heat is a good practice, provided the room is not made too warm and good ventilation is provided.

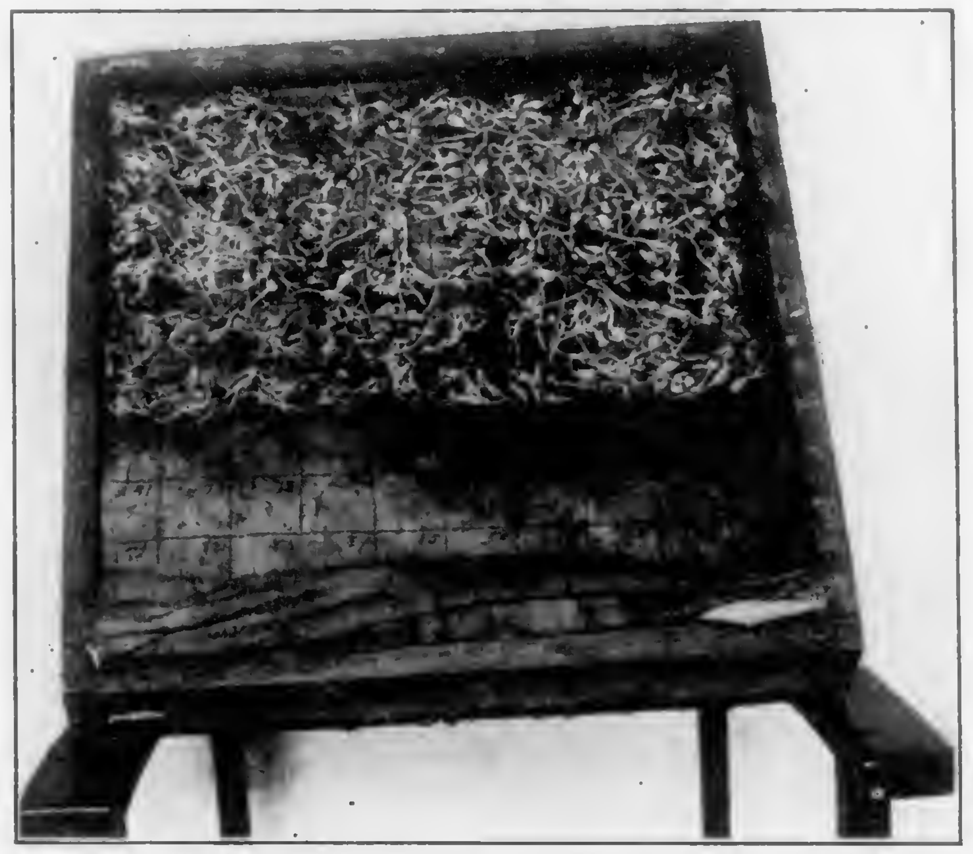


Fig. 1.—A CLOTH-SAWDUST GERMINATOR.
Six Days After the Corn Was Put In. This Germinator is 18 inches square and will test seed from 100 ears.

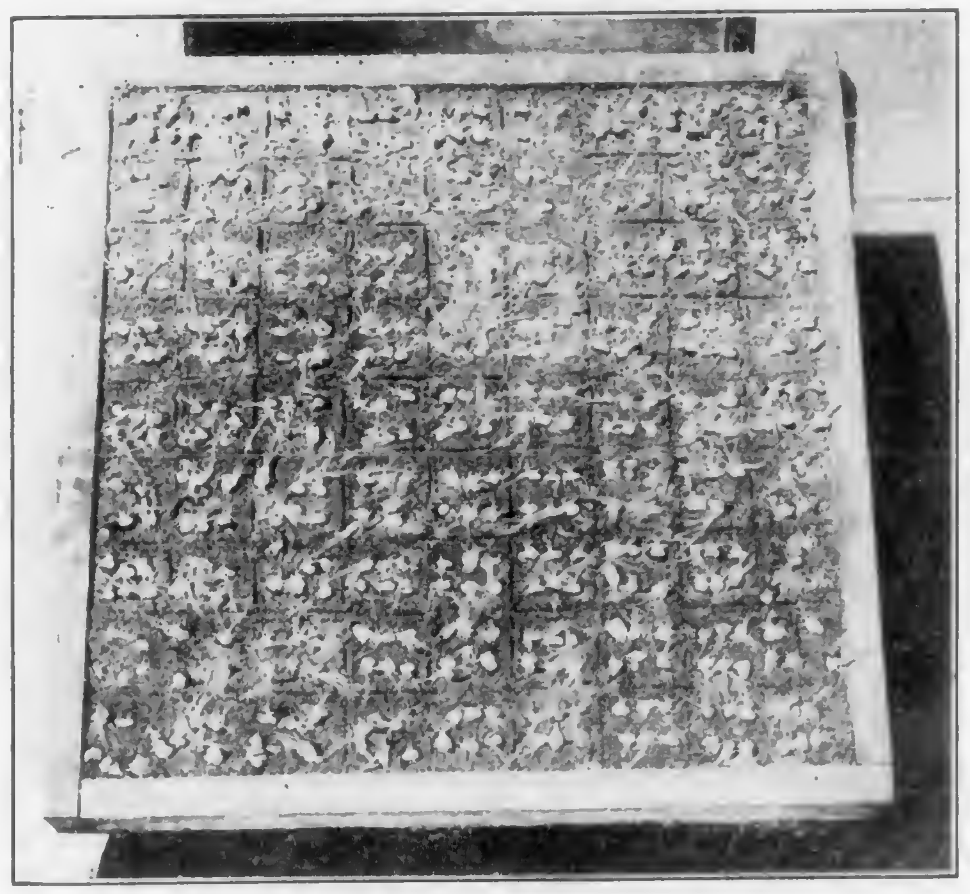


Fig. 2.—A SAND GERMINATOR.
The corn had been in about six days when photographed. This is 18 inches square and contains seed from 81 ears.

However, it is scarcely seasonal to spend much time discussing the selection and care of seed corn. The condition of the year's supply of seed has already been determined. The problem now is to do the best possible with the seed on hand. The supply of seed corn should be carefully gone over. Ears inferior in appearance should be discarded, likewise those that are mouldy or which are very evidently of low vitality. The mould is best seen at the butt end of the ear. Some ears will have grains that show cracks at the crowns or running horizontally around the grains. This is evidence of a dry rot, and such ears should not be used. A few ears will have grains whose germs break off when shelled. Such grains are dead. This does not mean that the grains which have the ends of the germs exposed are not good, but those that have the germs broken off. When the hull of the grain is wrinkled over the germ, it is an indication that the corn was not well matured, and such grains are likely to be of low vitality.

Testing Seed.—The seed should be tested for germination. The indications are that not one-half of the farmers of Pennsylvania make any germination tests. Knowing the condition of the seed in regard to vitality, is it any wonder that it was reported last year that in various communities 25 to 90 percent of the farmers replanted corn. Grub worms, wire worms, crows, cold, wet weather may all have had their part, but under the most favorable conditions the condition of the seed would have been responsible for many poor stands and made replanting necessary.

Now as to how the germination test should be made. The important thing is to test the grains from every ear. The ears to be tested should be laid in rows where they can remain until the test is completed. They should be numbered in some way, so that any desired ear may be readily found. A good way is to write the numbers on small pieces of thin cardboard and insert these between the rows on the ears. A number on every fifth or even every tenth ear will be sufficient.

Sawdust Germinator.—In the illustrations three different kinds of germinators are shown. In Figure No. 1 we have what is called a cloth sawdust germinator. As shown, the germinator was half filled with corn and run for six days. The germination has gone far enough to show which ears are good and which are poor. This germinator is made in the following way: A box is made, 18 inches square and three inches deep in the clear. About two inches of wet sawdust is put into it and packed down, smooth and level. This is then covered with muslin, which has been marked off into squares with a soft pencil. The cloth should be fastened at the corners with tacks. A box of this size is big enough for seed from 100 ears, and the cloth is marked so that there are 10 small squares each way. These are numbered from one to 100, to correspond with the ears from which the grains are to be germinated.

To fill the germinator we start with ear one and pick out with a pocket knife two grains near the tip of the ear, two grains at the middle, and two at the butt. We turn the ear to get the grain from different sides of the ear. We place the grains from this ear number one on the small square numbered one. From ear two we take six grains and put them on square two, and so on, until our germinator is filled. The grains should then be covered with more muslin cloth and finally with a wet burlap bag, or something else to keep the grains moist. For the muslin cloth nothing is better than a strip of muslin 18 inches long and a yard wide. This can be used for the marked part and for a covering for the grains. When the germinator has been filled, water may be poured over it so that it has all the water it will hold. After draining, the germinator can be taken to a room kept at a temperature about that of a living room. Before the test is concluded it may be necessary to water the germinator, which can be done by pouring water as before over the burlap. Instead of using burlap, one can cover the grains with a piece of cloth large enough to extend over the edges of the box, and then wet sand can be put over it. This can be easily pulled back when the test has gone long enough.

Sand Germinator.—In Figure No. 2 a sand germinator is shown. In this case the same sized box was used, one 18 by 18 inches and three inches deep. The box was entirely filled with wet sand, which was then smoothed with a straight edge. The surface was then marked off into squares the same as the cloth was in the other germinator. In this case there are nine small squares each way, giving the germinator a capacity of 81 ears. Notice how they are numbered. On one edge of the box the rows are numbered from one to nine, and on the other from A to I; the numbers and letters were put on with ordinary blackboard crayon, but a pencil is as good. The squares in the first horizontal rows would be designated as A1, A2, A3, and so on in a similar way with the others.

In this kind of a germinator the grains are stuck into the sand with the points down, so deep that the crowns are even with or a little below the level of the sand. When the grains start to grow the roots come first, and because of the resistance offered by the sand to their penetration, the grains will be lifted out of place unless they are held down. For this reason the germinator should be covered with boards until the sprouts are well started, when the roots will be strong enough to hold the grains in place. When a number of the germinators are used at one time they are piled one on top of the other until germination has gone so far that they need no covering.

"Rag Doll" Germinator.—Another kind of germinator is shown in Figure No. 3. This is known as a "rag doll" germinator. One is partly unrolled, showing the germinated corn in place; the other is still rolled up. This is the simplest germinator of all. It consists, essentially, of a strip of muslin marked off into squares, on which the grains are placed, and then it is rolled up. A strip of cloth a foot wide and of any desired length may be used. A strip three yards long will hold grains from 70 ears. The numbers to correspond with the numbers of the ears should be written on the cloth first. There should be two of these, side by side, and the long way of the cloth, and they should be about three inches apart. In the illustration the cloth is marked off with lines. This is scarcely necessary, for if one is careful in numbering and rolling the cloth, the grains will not get mixed.

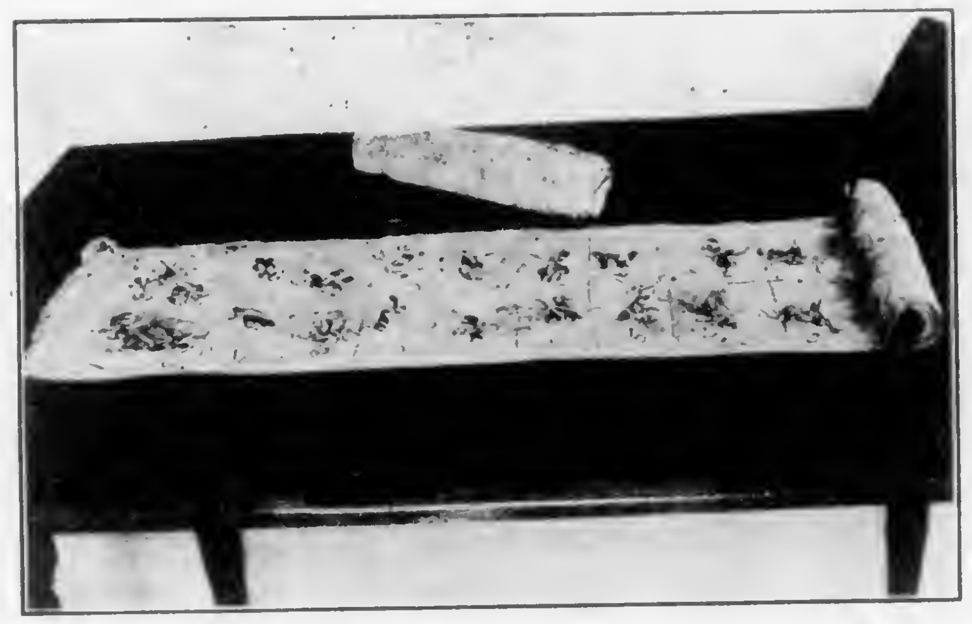


Fig. 3.—RAG DOLL GERMINATORS;

One unrolled at the close of the test, six days after corn was put into it.

Before filling, the cloth should be wet and spread out on a table. Then the grains may be taken from the ears and placed on the cloth. The lots of seed should not be placed in too straight rows along the cloth, but should be zigzagged, for they will then make a better roll and will stay in place better. When ready to roll up the germinator, one should take a piece of wet cloth or burlap and wrap this up for a core. This should be about two inches thick and as long as the germinator cloth is wide. If the cloth is rolled carefully the grains will stay in place. Do not wrap too tightly, for the grains will swell. When the germinator is all rolled up, tie lightly so that the roll stays together. Then thoroly soak the grain, place the roll in a pail of water for some hours, then take it out and drain and wrap in wet burlap. Place it in a warm room and keep it from drying out.

Whichever kind of germinator is used, the test should run for six days, and the temperature should be about that of a living room. When the test is completed, all ears not showing perfect germination should be discarded, unless there is a scarcity of seed corn, when the ears from which only five grains out of six grew may be saved; but these latter should be kept separate and planted thicker than the others. The germinator may become contaminated with mold, in which case it may be sterilized by putting the cloth into boiling water; likewise the sawdust and sand, if they are used.

Cost of Testing.—Now which germinator is the best? The results depend more upon the way in which the work is done than upon the kind of germinator used. The "rag doll" germinator is the cheapest. If eight-cent muslin is used a germinator for 70 ears need not cost more than eight cents and it may be used many times.

Precautions.—In making any germination test one should keep in mind the essentials for germination. These are, first, moisture; second, the proper temperature; and third, oxygen. The last mentioned is the one most likely to be overlooked. It is necessary that air reach the germinating seeds. For this reason most of our seeds will not grow if they are dropped into water. No more will they grow in sand or ground saturated with water. Drainage is very important, and it is for this reason that a sawdust germinator or a "rag doll" germinator will give better results than a sand germinator or a box filled with ground unless the drainage of these are well looked after.

Value of Testing.—Now why all this fuss about testing seed corn? Because too much dead seed is planted every year, causing many a farmer a serious loss, and because so little expense is incurred in testing all the seed corn a farmer needs. Think what a great increase one gets in his corn crop over the seed planted and you will realize how important it is that the seed have good vitality. A crop of oats 30 times as great as the seed sown would be a good crop; likewise a crop of wheat 15 times as great as the seed sown would be a good one. But a corn crop relatively as good would be 400 times as great as the seed used. Failure to test the seed often causes a loss of 10 percent of the crop, which, with a 50-bushel crop, means about $3 per acre. Such a loss can be prevented by investing a few cents for germinators and labor.

Much of the seed will be found nearly perfect in vitality. A good plan is to test one lot of ears and in case there is much lack of vitality, all can be tested later. If all used in the first test are good, the work need go no further. The work should be done early, before spring work becomes more pressing. March is the best month to do the work, for then there are so many days in which out-of-door work can not be done.

If you must buy seed corn, by all means get it on the ear if possible. You will get better corn and you can test it in the proper way for vitality. Never plant extensively of a seed not grown in your locality. There is too great a risk that the corn is not adapted to the new soil and climatic conditions.

A PENNSYLVANIA STATE FLOWER

By H. A. Surface

A step has been taken in the Pennsylvania State Legislature toward adopting a flower as the Keystone State's floral emblem. The spirit which prompted this action is commendable, and Hon. Mr. Jackson, of Wayne County, who introduced the resolution is to be congratulated; but a mistake was made in suggesting the daisy as the state flower. It is earnestly hoped that no official action will be taken toward the adoption of this weed as our emblem. Of the thousands of kinds of available flowers the one selected should not be that foreign pest commonly known as the "daisy" or the garden daisy, and scientifically known as Bellis perennis. Our state flower should be an emblem, and as such it should be loved and protected and associated with lofty and patriotic thoughts, as is the American eagle. The daisy is not a native of Pennsylvania, but has been accidentally introduced as a weed pest with more desirable plant seed from Europe, and in the plant kingdom occupies a place comparable with that of the English sparrow in the bird world.

Our farmers have paid thousands of dollars for the seeds of the vile daisy as accidental adulteration in the seeds of the best of all farm crops—the clovers. The daisy is one of our most undesirable interlopers, crowding out better plants, persisting in growing wherever it can find a foothold, and of no economic value for man or beast. It is an indicator of poor soil and of poorer farming, and is one of the greatest factors in making a poor man still poorer. It crowds out the life-sustaining and soil-renewing clovers and other plants, and is itself almost ineradicable.

Many cemetery associations absolutely prohibit the use of daisies for decorating graves because of the danger of the evil from seeding of this pest. Think of a flower as the state emblem that can not be used legally in decorating the graves of our honored dead! Consistency demands that our state flower should be one worthy of love and preservation, instead of being placed in the list of pests which the law requires destroyed, as the daisy at the present time. Think of our rural school children being taught to love and admire the daisy thru loyalty to our state emblem, while their fathers are toiling from dawn until night to destroy this weed, in accordance with the requirements of a just law! We should not permit unfounded sentiment to overwhelm common sense.

Statesmanship should demand the adoption of a floral emblem to which we can be consistently patriotic at all times. For beauty and utility no plants excel the clovers. Upon these we are depending to an increasing extent for our meat, butter, milk, cheese, sustenance of farm animals, and even eggs and farm crops. They are also our chief soil renewer and our most economic means of obtaining soil fertility and of growing all other crops. Where clover has grown there can any farm plant grow, as it leaves the soil richer instead of poorer.

Not only does clover furnish food for all live stock and also for the soil, and thus for all crops, but it also yields nectar and gives the most delicious food (honey) known to mankind. Utility, beauty, sentiment and loyalty all can be united in our attitude toward the most useful plant known to man as the red clover (Trifolium pratense), which is nominated as the floral emblem of our great Keystone State. While the teacher extols its virtues, and the pupils sing of its beauty and fragrance, we can find the parents engaged in the lucrative business of sowing, planting, mowing or feeding it, and the happy, useful kine contentedly reveling in its luxuriant growth.

If one should think the clovers too prosaic and practical to justify adoption as our state emblem, no mistake can be made in the selection of that modest and beautiful flower of the spring time, growing native in all parts of the Keystone State, and known everywhere as the "Blue Violet," called by scientists Viola cucullata.

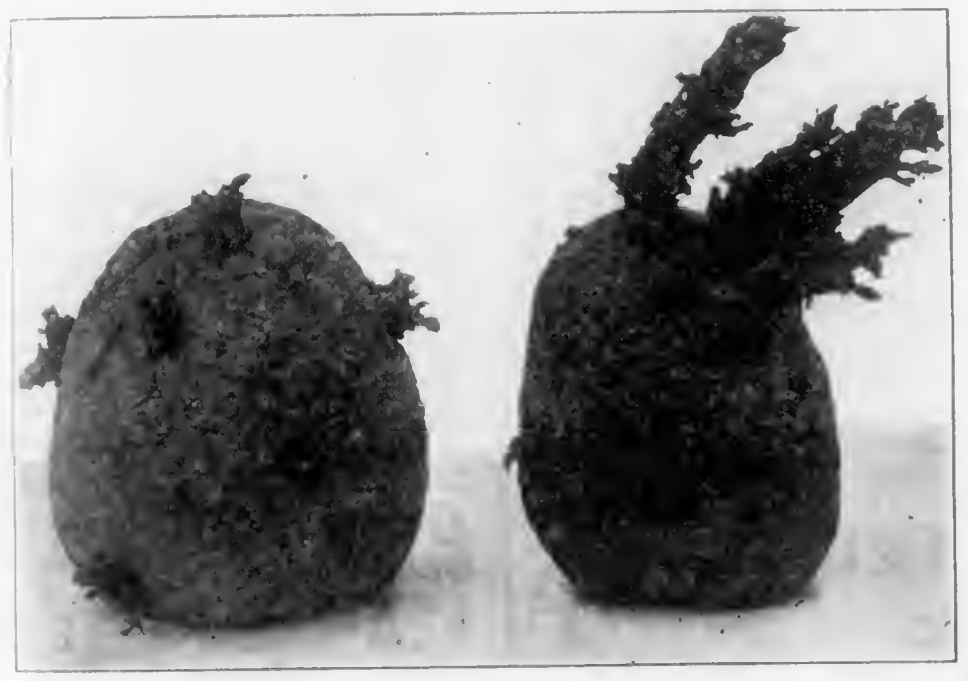
The violet is one of the early flowers of the spring time, the blossoms of which are harbingers of the harvest season. Its beauty is unquestioned, its color signifies purity, while the entire plant is a type of modesty. It is a good, healthy, vigorous plant, pushing forward and succeeding where other plants fail, yet never regarded as a weed. It is found native thruout the entire state of Pennsylvania, and is known and loved by all.

One peculiar feature of the violet, which is not generally known, is that it has a special means of producing seeds under adverse or unfavorable conditions. Should all its conspicuous flowers be removed, it would yet be able, by its concealed and inconspicuous flowers to produce seed, and thus typify the achievement of results, notwithstanding apparently adverse conditions.

For its beauty, its purity, its modesty and its success under all conditions, as well as its universal occurrence in Pennsylvania, and the love manifest for it by the boys and girls thruout the state, the violet is most commendable, and could well, indeed, be hailed as the floral emblem of our great Commonwealth.

WEEKLY TOPICS FROM THE FARM.

Blasting Stumps We have been busy blasting stumps from an old orchard. This orchard is about 40 years old, and contained apples of worthless commercial varieties. We sold the trees for lumber, and thus received enough to pay for blowing out the stumps. If we had this job to do over again, we would blow the standing trees out and have them sawed up afterward. This we have found to be much the better way. It requires a little more dynamite, but pays in the end, since less wood is left in the ground. There remained standing about six big trees that were so gnarled and twisted that no good lumber could be gotten from them. These the lumberman refused to chop down and, as an experiment, we blew them out as they were. Four charges of 40 percent dynamite were placed well under each one and a fuse sufficiently long to give us time to get at least 100 feet away. The explosion not only uprooted the tree but took most of the big roots out. Where the stumps alone were blasted, the charge had to be most carefully placed to avoid splitting. When this was the result, each piece had to be torn out with horse power, the time and labor fully equalling the extra cost of dynamite in the case of the standing tree.



SEED SPROUTED IN THE SUN PRIOR TO PLANTING.

Courtesy of Ohio Experiment Station.

Planting Oats Oat planting is well under way and some of our neighbors have finished. While it is advisable to get oats in early, it is a question whether the very early fields will do any better than those planted a week or 10 days later. The ground is in good condition, however, and we believe that nothing will be lost by planting now. The oat crop is planted too carelessly. Many farmers have the idea that in this locality it is impossible to grow big crops of heavy oats, and as a result the seed is planted in a slip-shod way, and the less said about it the better. Most of this low yield is the result of carelessness. Oats will not run out unless allowed to do so, and the matter of weight is simply one of selection. Do not send to Alberta or Russia, or any other far distant country for your seed, but look around your immediate vicinity for some heavy oats that yielded well last year. If the man wants a big price, pay it, for it is no economy to save on the seed bill. When the harvest comes take a few bushels of the new seed to the mill and have them blow out all but the heavy grains, and continue this practice from now on. In a few years you will be growing big crops, too. Fit the seed bed as carefully as for any other crop. We use the plank drag spoken of last week, and find that it helps wonderfully towards high yields. We have found that not less than 300 pounds of a good, high-grade fertilizer, chosen to meet the needs of the particular field will give good results. A little care this year on the oat crop will pay when harvest time comes. Our neighbor finished plowing last week and at once rolled his field. He followed his roller with the seed drill and is now looking for a big crop. We are afraid that disappointment is ahead, but shall report his yield when the crop is cut.

The Farm Flock Most of us have our chicken crop well under way and are looking forward to better results than ever this year. We have found that those who are keeping well-bred birds are the ones who are making the money. The average farm flock is a losing proposition, and we believe that 50 percent of the farms would do better to abandon chicken raising. The only chance a farmer has to make money raising eggs is first to study the business thoroly, keep well-bred stock in a scientific way and sell to a strictly fancy trade. This means a personal familiarity with the market and but few farmers have that, even tho they have the other requirements. Keep books this year and figure out just how the chicken end of the farm stands. I think you will agree with me that something will have to be done either to stop the leak in this direction, or to sell at a profit. My neighbor has substituted muslin for glass in his poultry houses, and believes that better results will follow. This will certainly be the case, for the time is past when chickens can thrive under the hot, unsanitary conditions of the glazed house.—A Farmer.

SUN-SPROUTED POTATO SEED

The Ohio and Michigan Experiment stations have issued bulletins on pototo culture that are of great value to anyone who will give them thoro study and application. Mr. Ballou, of the Ohio Station, says that sun-sprouted potato seed is greatly superior to seed that has been kept in a dark, warm room up to the time of planting. His advice is to sun sprout the seed after danger of severe freezing is over. We have been doing this for a number of years and find that it pays well. They can be placed on shelves on the sunny side of a building and left there for weeks, or placed on a barn floor where there is plenty of sunlight until planting time. They should be spread out, one layer thick, so there will be no danger of heating. When thus treated the tubers send out short pencil point sprouts or shoots, hard and green in color, which are much different from those long, white sprouts formed in a dark room. They will keep when spread in the sun for a long time, but must be spread thin on the floor of shelves.

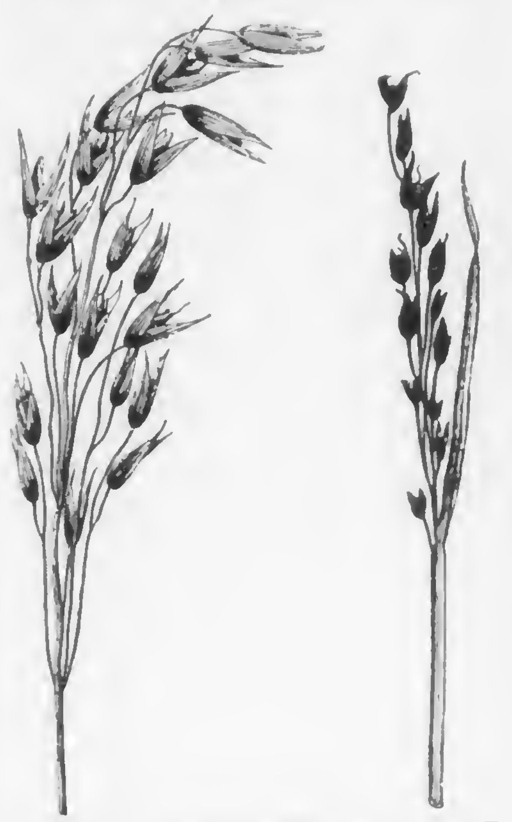
Early planted potataes when started in this way will come thru the ground much sooner and produce stronger plants. This plan is particularly good when small tubers are used without cutting. The potato planters will rub off some of them in planting, but they will come on sooner than when they are removed. Mr. Ballou says it is found that where the tubers are given a long sun bath in this way, soaking to prevent scab is not so necessary, as sunshine of itself is a good fungicide. It is, however, safer to soak them where there is any indication of scab, for the sprouts will not be injured by the soaking.—C. C. McCurdy, Crawford Co., Pa.

OAT SMUT

In many parts of New York State the loss from oat smut during 1912 amounted to 25 percent or more of the crop. This great loss might have been prevented easily and cheaply by treating the seed with a solution of formaldehyde before sowing. The abundance of smut last year probably means that a large percentage of the oat seed to be sown this spring contains the spores of the smut fungus and that there will be a general infection of the oat plant again this year unless measures are taken to kill these spores.

In order to do this proceed as follows: Spread the cleaned oat seed on a clean barn floor to the depth of about two inches. Sprinkle the seed with a solution of formaldehyde made by diluting 1 pint (1 pound) of the commercial 40 percent formaldehyde solution with 45 gallons of water. This amount of the solution will treat about 60 bushels of seed. Sprinkle enough on so that each seed is well wetted; it is necessary to shovel the seed over in order to accomplish this. After sprinkling shovel the seed into a pile, cover with canvas of blankets, and leave thus for several hours or over night. On removing the covering spread out the seed again so as to dry it enough to permit its being sown with a drill. In sowing, allowance should be made for the swollen condition of the seed, according to the amount of seed used per acre.

This treatment can be given at any time before sowing the seed but, unless it is done just previous to sowing, the seed should be thoroly dried.



A TYPICAL DEVELOPMENT OF OAT SMUT

In order to insure perfect control of the disease it is advisable to dip into the formaldehyde solution any grain sacks that may be used for holding the treated seed.

The cost of material for this treatment is less than a cent per bushel of seed treated, and if one uses his own seed the treatment need not be given every year.—M. F. Barrus, in Cornell Announcer.

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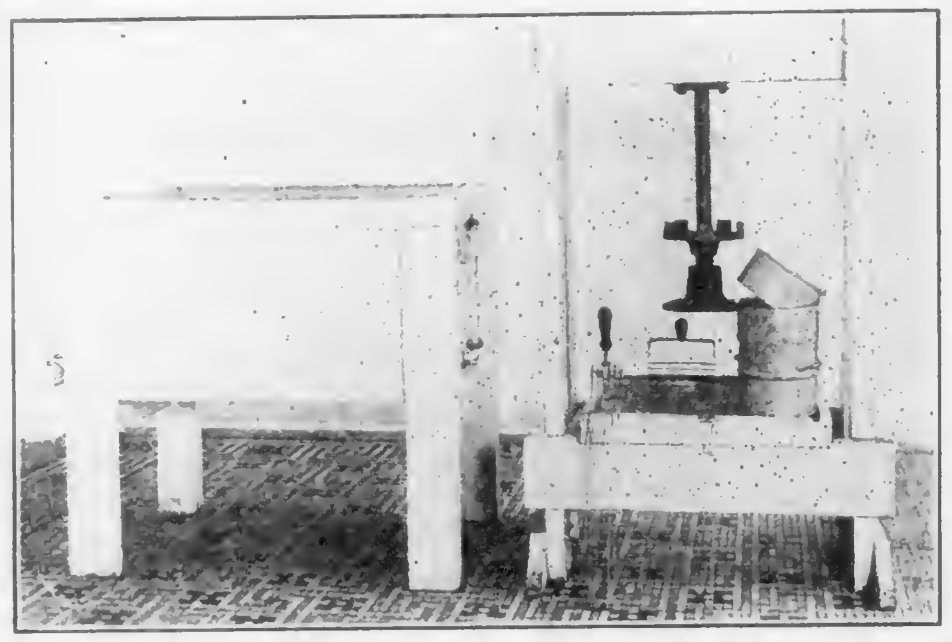
Cheese on the Farm.

By Prof. CARL W. LARSON, State College, Pa.

Only those who have made cheese on the farm appreciate what a treat it is to have a few rolls of this rich, home-made product. Less and less of it is being made on the farm, largely because the people do not know how, but perhaps more especially because it has been found more profitable in general to take the milk to a central factory and have it manufactured there. From a commercial standpoint, unless a farmer can secure a special trade for his cheese it is better to sell his milk, but many would rather go to some extra work in order that they may have the home made product. With a little care and good judgment, almost any one can learn to make a cheese. Very little equipment is required.

Milk to Use.—Select good fresh whole milk, mixing both night's and morning's milk. A fairly good product can be made by using partly skim-milk, but it is not advisable for this purpose especially.

Ripening the Milk.—The milk should be placed in a vessel that is jacketed, so that the temperature can be regulated and controlled. Inexpensive vats with a wooden outer tank for water answers the purpose very nicely. These tanks should be square and with a comparatively flat bottom. Any sort of tin vessel, however, such as a boiler, may be used and placed into a tub or tank of water which could be controlled. The milk is placed in the tank and the water on the outside warmed up to sufficiently high temperature to bring the milk up to 86 degrees F.


A COMPLETE CHEESE OUTFIT FOR FROM 100 TO 200 POUNDS OF MILK.

The milk is left at this temperature to ripen for a short period, perhaps a half hour. If a good clean sour milk is available, about one pound per hundred pounds of milk may be added to hasten the ripening. The milk at this stage, however, should be sweet, as far as can be determined by the taste or smell. On the average, it will require about 10 pounds of milk for each pound of cheese. This varies, however, with the richness of the milk. A richer milk will produce a greater quantity of cheese.

Adding the Rennet. Rennet is a product derived from the stomach of calves. It is simply used to coagulate the milk, the same as is done in the first stages of digestion of the milk in the stomach. If regular standard rennet extract is used, about 12 cubic centimeters is sufficient for 100 pounds of milk. The rennet should be diluted with cold water before being added to the milk. If the tablets are used, they should be first dissolved in cold water. The diluted rennet should then be carefully stirred into the milk, requiring about three minutes of careful stirring. The milk should then be left without being disturbed and without changing the temperature, which, as above stated, should be 86 degrees. In a few minutes the milk will be seen to thicken or coagulate, and if the time from the adding of the rennet to the time of first thickening is multiplied by 2½, it will give the number of minutes from the time the rennet is added until the curd is ready to cut.

Cutting the Curd.—This stage of the making should be carefully managed. If the cutting is done in such a way that the curd is badly broken up, large quantities of fat will be lost in the whey. The curd is solid from top to bottom, and it should be cut into cubes to allow the whey to escape and also to make it possible to heat the curd uniformly. For the cutting, ordinary curd knives can be bought at little expense. If curd knives, however, are not available an ordinary long-bladed knife may be used by first cutting lengthwise and then crosswise, and then stirred until the strips thus made are broken up into particles about the size of one-half inch cubes. With the special curd knives the cubes can be very uniformly made.

Cooking.—After the curd has been cut it should be carefully and slowly stirred, so as not to break up the particles any more, and the temperature slowly raised up to about 98 degrees. After about an hour or an hour and a half the particles will have contracted by the heat and by the increasing acid or sourness in the whey, so that they are considerably firmer. When they become sufficiently hard so that when a double hand full of them are taken out of the whey and squeezed slightly and the top hand removed the curd will fail apart, it is ready to be drained free of whey.

Draining.—This may be done by simply dipping the curd out into a cheese cloth, or by simply holding a strainer below the spigot in the vat. Only a small amount will run out. The remainder will settle to the bottom. This curd should then be carefully stirred, so that the pratieles will not stick together. After an hour they will be in condition to salt. This process, however, is known as the granular process, because the curd is not allowed to mat.

The real American cheddar cheese is different in this process, in that instead of stirring the particles to keep them from matting together they are allowed to mat after drawing off the whey and after a few minutes form a solid chunk of curd. This is cut into blocks about five or six inches wide and turned every 15 minutes. After about an hour in this condition these blocks are cut up into strips, five or six inches long by one-half inch. These strips are then stirred every 10 or 15 minutes to keep them from matting together,and after about a half hour are ready to salt.

Salting.—The curd when ready to salt is smooth and tough. When a piece is bitten into it is like rubber and will tear like the white meat of a chicken's breast when cooked. It should be salted at the rate of about two to two and a half ounces of salt per hundred pounds of milk. The salt should be sprinkled over uniformly and the curd piled in one end of the vessel and left for 20 minutes.

Pressing.—The cheese is now ready to be put into the molds. For this purpose special molds can be purchased, but if none are available a tin vessel of any kind with straight sides may be used, such as a small shot gun can. Holes, however, should be punched in the bottom to allow the whey to escape. A circular piece of wood or metal should be placed on top and the pressure applied. The weight should be gradually increased, being careful not to have too much pressure at first. After pressing about an hour, the cheese should be taken out and wrapped with cheese cloth. This is done so that the curd will close up smoothly. If no cloth is used, there will be openings in the side of the cheese. Weights should again be placed on the cheese and left until the following morning, when the cheese may be removed to the curing room.

Ripening.—Cheese will cure best at a temperature of about 40 degrees, but at this temperature more time is required in curing than when a higher temperature is used. The only real important point to guard against in the ripening is to prevent the cheese from becoming too warm. It is desirable that the temperature does not reach much over 50 degrees, altho fairly good cheese can be made at a temperature of 60. The temperature will largely determine the length of time of curing. At a temperature of about 50 degrees this cheese will be in about the right condition to satisfy the average consumer in about six weeks; altho many prefer a longer curing period. Any clean fairly cool room may be used. A damp sellar it not desirable. After the cheese is placed in the curing room it ought to be turned occasionally and rubbed with a cloth, so as to remove some of the mold as it forms. It is very desirable to dip the cheese in paraffine about three or four days after being made. This will prevent mold and keep the cheese in much better condition.

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THE BUSINESS SIDE OF THE MILK PAIL

By Dr. G. M. Twitchell, Androscoggin Co., Me.

The difference between agriculture and other industries is that on the farm we have been prone to consider the industry as a whole, while in other fields men have sought for the most profitable part along the line of least resistance. In the changes going on so rapidly that we hardly realize, until conscious that we are behind, men are being forced to a study of details. Never mind if this is nothing new, it is surely true and to succeed we must be alert and alive.

Passing so rapidly from a simple to a complex life where demands increase and income must be multiplied, it becomes necessary that time, energy and money be conserved. A contractor found that by minimizing the motions of his bricklayers their efficiency was increased 40 percent and their earnings increased 35 percent. This he obtained by reducing the motions in laying a brick 60 percent. Here we approach the viewpoint of the successful buiness man. Has this any application in agriculture? Does it bear any relation to milk making? The shoe manufacturer finds his profits reduced to less than five cents per pair, and the cotton manufacturer to a small fraction of a cent per yard. Swift & Co., of the great meat trust, testify that their profits for 1912 were but three cents upon every dollar sold. Here is the basis of good business in the industrial world.

Is agriculture a business or simply an occupation? If a business, it must be controlled by the same rigid business laws as hold in the industrial world. If an occupation, it is governed by a law peculiar to itself, as exacting as holds elsewhere, and with its requirements you and I must become familiar. In 1913 there is to be no escape from this demand if permanent success is to be insured. This means primarily that the first step in the milk business is to know the cost of keeping a cow. Here is the pivotal spot. The man with an average herd needs this information that he may weed out the unprofitable animals, and the successful dairyman requires it that he may be inspired to do still better. Until this question of cost is solved, there can never come that united demand for a living price necessary to insure growth and permanence to the milk industry.

Population is increasing rapidly. The demand for more milk is steadily increasing, and the future would be bright if producers could obtain a fair living price for the product. Where is the responsibility? Contractors today fix the price to be paid largely upon estimates of cost of keep and general average production, as estimated by dairymen. These estimates cover hay, grain, silage and pasturage, and sometimes part of the labor, altho too often the man accepts the manure as compensation for the labor item. The moment the milk passes into the hands of the contractor, interest, taxes, insurance, labor of men and teams, depreciation of buildings and vehicles, and from 10 to 25 percent for incidentals, as well as the percent of profit, all become legitimate charges against the product. Please explain, brother milk-maker, why these items attach at once when the milk passes out of your hands, yet bear no relation to the cost of production? Why should not each and every item enumerated, as well as others, be critically considered in determining the cost of keeping a cow? They are part of the business of the farm, and failure to recognize these may, in some degree, account for the falling off in number of herds and want of signs of thrift sometimes seen in rural sections. They surely do explain why the business of milk making has not more attractions for the young man.

The knowledge of this fact of actual cost becomes necessary today for several reasons, chiefly that without this one can not know whether milk is being made at a profit or not, and wanting this knowledge, there can hardly follow that critical study of individual production necessary to determine worth of the individual cow. More than this, is the knowledge of cost necessary that men may realize the absolute necessity for joining forces to demand a living price.

For 1912, producers realized less than four cents per quart, while contractors sold for eight to ten. The margin is too broad for justice to be done the man with the milk pail. Repeatedly during the winter, in going over New England, have I seen farmers delivering four to five cans at the railway stations for which they received 33 to 35 cents per can of eight and one-half quarts, not enough to pay for delivery,

$65,000,000 would be saved annually by the exclusive use of DE LAVAL CREAM SEPARATORS

It is estimated thaat a million cow owners in the United States are still skimming their milk by some wasteful "gravity" method.

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Then to this tremendous cream waste through the use of inferior separators must be added the excessive cost for repairs on cheap and inferior machines and the cost of replacing machines which should last from ten to twenty years but which are ready for the scrap heap in two or three years. There must also be taken into consideration the loss in lower prices received for cream and butter due to inferior quality of cream produced by poor separators, all of which must easily equal at least $10,000,000 more.

This makes a grand total of $65,000,000 which would be saved to the cow owners in this country by the exclusive use of De Laval Cream Separators.

At first sight these figures may seem startling but any experienced dairyman or creameryman will agree that the cream and other losses without a separator or with an inferior one will average a good deal higher than the above estimates and that these figures are really very conservative.

Any cow owner who is selling cream or making butter and who is not using any cream separator or an inferior machine, is really paying for a De Laval in his cream losses and at the same time depriving himself of the benefit of its use.

De Laval Separators are not only superior to all others in skimming efficiency but are at the same time cheapest in proportion to actual capacity, while they are so much better made that they last from two to ten times longer.

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It will surely be to your advantage to join the million and a half satisfied users of De Lavals. A little investigation will prove to you that the truth of the matter is you really cannot afford to sell cream or make butter WITHOUT the use of a De Laval Cream Separator.

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The De Laval Separator Co.
NEW YORK CHICAGO
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leaving out the question of production. Yet there is no incentive for increase and will not be until the milk-maker realizes a fair share out of the consumer's dollar.

Everywhere men are studying machinery to find means for reducing the percent of waste in production and increasing output. Gradually we are getting away from the curse of general averages as men awake to the fact that reliance here is certain to insure star boarders in the herd. The man content with the average of one can per day from each cow is mighty certain to be carrying dead wood in his herd. Without accurate knowledge of cost of keep there is the certainty of loss in the business. If milk production is the cash business of the farm, then there must be charged against the product all the items of maintenance of buildings, teams, vehicles, insurance, taxes, interest, ice, veterinary medicines, keep of bull, salary and board of hired man, a good percent for incidentals (those items constantly arising for which no man can provide), as well as value of the hay, grain and silage in the barn and the pasturage. Doing business with departments, each must be made to contribute to the total of net earnings.

In Wisconsin, in a five-year test, it was found that it cost $150 to keep a cow one year. In Ohio not quite as much, and in Connecticut practically the same. "But," says one, "if obliged to figure all these items it would ruin me." You are not ruined yet, but you have been trying to meet every one of these all the years you have been in the business. You have not figured them, but they have been there just the same. Because you have not taken full account of cost you have not been prepared to demand and insist upon a living price for the milk. It has cost 10 percent of the value of the buildings yearly to keep painted and in good repair, 10 percent to maintain teams, harnesses, implements, etc.; more than 10 percent yearly to make good the accidents, deaths, failures to breed, abortion, etc., in the herd. It has cost $100 to own and keep a purebred bull. The farm has been obliged to pay taxes, insurance, interest and labor wage all the years; why should not all these be included in the cost of keeping a cow?

Why should the milkman give the contractor the use of his team or barn? Why should he pay taxes and get nothing back? By what law of justice can he excuse himself for counting cost to cover only hay, grain, silage and pasturage, and giving the rest to the man to whom he delivers the milk? There is no business method here, and therefore men accept 40 percent of what the consumer pays as all they can get, and find no enthusiasm in the business. The fact is that we have been pursuing a leap-frog, haphazard method, and contractors have been prompt to take advantage. The time has come for producers to count the cost of production and prepare to demand a fair living price for the product. The cheapest article of food on the market today is milk.

The farmers hold the key to the whole situation if they but unite. Meeting the force of organized resistance in the disposal of milk they must prepare to press their claims for just recognition to the finish, or find yearly the path growing more and more thorny. Rights there are for the producer of milk, but he must find them unaided by the other fellow, and the path to these lies thru intimate knowledge of the cost of keeping a cow, the actual production of each animal and the building up of the herd.

Having established the cost, the next step is to determine actual individual production. The scales, or balances, and milk sheet, are today as necessary in the tie-up as the milk pail. If it costs $130 to keep a cow and her milk product is 4,000 pounds, the cost is 6½ cents per quart. With 6,000 pounds the cost is 4 1/3 cents, and with 8,000 pounds it is 3¼ cents per quart. As it will cost more to feed a cow giving the larger quantity, the cost per quart would be increased slightly. How many 8,000-pound cows are there in the herd? How many 4,000-pound cows? No man can know who does not rely upon the scales and milk sheet.

Over and over again has this gospel truth been preached, yet there are thousands today who cling to the "guess so" end of the business and find that "farming does not pay." All that has been written centers about one thought, that of exact business methods. Reaching for these, the whole atmosphere would clear, cost of production be reduced, volume of production increased and producers be prepared to press their claims for a fair living price for milk. I will take up, in another article, the cow side of this same problem, believing it to be as vital as any.

FATTENING THE DAIRY COWS

On the dairy farm it frequently becomes necessary to feed one or more of the cows for beef. It is commonly urged to feed largely on corn meal. There is hardly a feed that is so largely digested as corn, but corn is decidedly a carbonaceous feed. I have come to the conclusion that it is just as well to keep right on feeding the dairy ration when one wants to fatten a cow as any way. Perhaps I would modify that statement a little, because the protein requirement for milk may be larger than for flesh, and it might be as well to use a little more corn. I have fed the dairy ration, but have added a little corn meal some of the time while fattening the cow.

After the milk is well dried off and the cow is giving but little, then one or two pounds of corn meal twice a day may as well be added or substituted for a part of the regular ration. The fact is that it requires protein to make flesh almost as much as to make milk. Fat that is pure fat is not all that makes good beef. The beef feeders of the West are using cottonseed meal or oil meal, or both, to a considerable extent. Just at present corn meal is somewhat cheaper than the higher protein feeds in proportion to the energy value of the feed, and therefore a cheaper feed to use, so far as it does not interfere with the balance of the ration, but even now I shall not depart very far from the standard dairy ration when feeding for beef.—H. H. Lyon, Chenango Co., N. Y.

JUDGES OF GUERNSEY CATTLE

The American Guernsey Cattle Club has just announced its approved list of judges of Guernseys at the fairs for the season of 1913. Eastern appointments are as follows: S. M. Shoemaker, Eccleston, Md.; F. Ames, North Easton, Mass.; Robert Scoville, Chapinville, Conn.; J. R. Danks, Supt. Tarbell Farms, Smithville Flats, N. Y.; Joseph L. Hope, Madison, N. J.; H. W. Comfort, Fallsington, Conn.; Prof. W. H. Bishop, National Farm School, Farm School, Pa.; W. A. Alexander, Union Springs, N. Y.; C. C. Taylor, Lawtons, N. Y.; Ezra Michener, Lumberville, Pa.; E. T. Gill, Haddonfield, N. J.; F. S. Peer, Ithaca, N. Y.; Prof. J. M. Trueman, Storrs, Conn.; Prof. F. C. Minckler, New Brunswick, N. J.; Prof. Harry Haywood, Delaware College, Newark, Del.; F. G. Benham, Canandaigua, N. Y.; N. I. Bowditch, Framingham, Mass.; Charles H. Jones, Wellesley Farms, Mass.; M. T. Phillips, Pomeroy, Pa.

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Poultry

WINTER EGGS PAY

It is not in a spirit of controversy that the writer replies to "Mac" (page 269), and disagrees with him in conclusions. I believe winter egg production does pay—in fact, I know it does with me, by my records. This question depends on what different people consider "paying." Some farmers seem disposed to always charge up everything consumed by their stock at the very top-notch retail market quotation for A1 grade of such kinds of feed and then add to this their own labor at from 20 to 40 percent more per day than they are paying their highest-waged employe, or than they themselves could obtain if hiring out for the same work. This is not fair to the stock nor fair to the farming business. I consider that when fowls give a net income equivalent to 6 percent on the invested capital they are giving a good profit. And when the net returns are equal to 10 percent it is really a "melon-cutting" dividend. How many of the incorporated businesses in "Mac's" market city or any other community—declared a dividend of over 10 percent last year? Not many, I'll venture to predict! Certainly there were not many in my market city. I can not feel any sympathy with my fellow farmers who are continually crying that this or that line of farming don't pay, and try to bolster up their statements with figures wherein they give the benefit of every shift of the markets to the dealer, and the benefit of every doubt in labor value to themselves and against their stock.

Returning to the specific matter of winter egg production being profitable, I can say emphatically that it has been profitable with me on a considerable scale for nine seasons and in three widely separate sections of the country. As to the relative profits of winter egg production and egg production during the natural laying season I am not qualified to speak, as all my market eggs are taken by private trade at a fixed year-round price, so I am not affected by the high current prices in winter nor the low current prices in summer.

The past fiscal year (August 1st to July 31st, inclusive) the pens of birds for commercial egg production returned a net income equivalent to .083 percent on the invested capital, the eggs having been sold at 30 cents the dozen. The two years before that, with the eggs sold at 27 cents per dozen year round, the commercial egg pens returned a net income equivalent to a little better than .067 percent; while in the five preceding years they gave a good profit—just how much I do not know, as the flocks were being continually added to by purchase and rearing and continually reduced by weeding out the "loafer" birds, so no flock was of the same size for a month running. But I do know that, as a whole, my egg-plant paid a profit during each of these years.

I have not experimented with separate pens to determine the difference in the egg production of a pen crowded for winter eggs as against the total year-round production of a like pen of layers not so crowded in winter. But my records do show that the birds of my commercial egg pens lay more than one-half as many eggs each month during November, December, January and February as they do each month during March, April, May and June. The birds in these pens are all either two or three year olds or March hatched pullets.

It may be, I suppose, that where one sells their eggs wholesale at the current prices, it does not pay to crowd winter egg production, as the majority of the store-patronizing egg-consumers buy the storage eggs at this time at a less price. But even under these market conditions, I do not think forced winter egg production would so greatly reduce the total egg production of the bird as to offset the difference in price.

All in all, from my own experience and records I can not figure out winter egg production as unprofitable. In fact, so far as my experience touches the two sides of the question—I am compelled to differ from your correspondent—and this applies to winter egg production not only in this section of York state, but also in two other and widely separated sections. From what I have seen on trips into still other parts of the country, I am compelled to believe that if one does not derive a good profit from winter egg production anywhere in the United States near a consuming market, at least, the fault is with the poultryman and his methods rather than with the winter egg producing business.—Clark Westford, Schenectady Co., N. Y.

POULTRY BALANCE SHEET

Last year we fed a great deal of corn and cob meal, but I have found that we have not secured as high egg production per hen as in former years even when making the dry mash one-fourth beef scraps. We are now feeding equal parts wheat bran, middlings, corn meal and beef scraps, with one-half pound of granulated charcoal to every hundred pounds of mash. This is the most simple mash that we have used after 10 years' experience and a careful study of many feeding experiments. Following is a balance sheet showing results from this system:

Debits.—Value of stock on hand January 1, 1912, $631.25; equipment, $225; interest at 6 percent on investment in equipment, $13.50; cost for feed for year, $657.24; total debits, $1,304.99.

Credits.—Value of stock on hand January 1, 1913, $681.75; equipment, $300; receipts, $1,349.86; total credits, $2,331.61. Balance, $1,026.62. Number eggs laid during year, 64,270; average number hens kept, 549; average number eggs laid per hen, 108; average profit per hen, $1.72.—C. C. McCurdy, Crawford Co., Pa.

THE FARM FLOCK

I have always had faith in the American hen, altho I must admit that she is at times a very annoying individual on a farm among other live stock where general farming is practiced.

Last fall I resolved to find out what she was really worth. The flock consisted of 137 hens and 2 roosters, of all ages and colors, black, red, white, barred and all of the various shades in between. They were fed liberally and began laying in December.

The first of January, 1913, I took an inventory of all farm activities and am keeping an account with them. I take this account of the farm flock from the ledger:

Eggs sold during January, 70½ doz., average price, 25 2/5c...	$17.91
Cost of feed consumed	14.34
Profit	$3.57
Eggs sold during February, 76½ doz., average price, 22c.	$16.83
Cost of feed consumed	10.67
Profit	$6.16

The larger profit for February is due partly to the fact that a new lot of feed was drawn and mixed near the close of January and charged in that account.

This is not a large profit. Not enough to pay for the labor, depreciation, etc., but I am satisfied that if a mixed flock of mongrels can pay for their feed, a flock of "bred to lay" fowls can and will yield some real profit.—Ross Nicodemus, Bedford Co., Pa.

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Horticulture

OVER-PRODUCTION OF APPLES.

By S. W. Moore, Mason Co., W. Va.

On every hand where we go, east or west, in city or country, we are asked the question, "What about the over-production of apples?" Orchardists and cold storage men are discussing it. Nursery men with their large stock of trees are asking the same question.

Letters of inquiry come from lawyers, doctors and merchants who have been attracted by the high prices of fruit during some of the past seasons and are considering orcharding as an investment. Bankers are among the most earnest inquirers; in many instances they have or expect to largely finance the undertaking, and it is upon the success of the fruit business that the banks must largely depend. This is particularly true in strictly fruit sections; striking examples are to be found in Colorado, Montana, Washington and Oregon. The press, especially the agricultural papers of the country, are continually being asked by these and others, "What about the over-production of apples?" So the editors of these publications turn to the producers and ask them, "What they think is the outlook?" It is in response to an inquiry of this kind that I shall attempt to give my opinion as to the matter of over-production. What I shall say will not only express my opinion as a grower, but the conclusions reached after what I have seen in the various orchard sections of the country during my institute work this winter.

My work being strictly along orchard lines, I have tried to make a special study of the conditions existing in the various sections, both in orchards and markets. Those conditions upon which, in my opinion, depends the answer to this question. Time nor space will not permit of a full discussion of these things. There are several of these factors, any of which may determine the profitableness or unprofitableness of an orchard. So when I am asked to answer this great question, I frequently take a short cut and cover the whole ground by saying that there is greater danger of over-planting than in over-production. There is, however, a vast difference in over-planting and over-production. It may be quite an easy thing to plant more than one has help or means to care for; when this is done failure may come in spite of the fact that all other conditions are unusually favorable. I have visited some such plantings recently. Whenever we go on the market and find it full of apples which are covered with scab or other fungous diseases, we should not be surprised to find them moving very slowly and the prices not satisfactory to the grower. At such time and places we hear a great deal said about over-production, while on the same market we may see apples which have been carefully grown and placed before the public in an attractive manner selling at fancy prices. I believe—and conditions in our glutted markets this season have borne me out—that there it little or no danger of the over-production of good, first-class apples. On the other hand, I am just as firmly convinced that there is grave danger of glutting our markets with poorly-grown, badly-handled, low-quality fruit.

Those contemplating the planting of apple orchards at this time should, I believe, be extremely careful in making their choice of location, soil and varieties. I should look rather to quality than quantity, as the buyer who makes quantity the chief consideration in his purchases will likely be able to use some of the medium-grade fruit, while the man who wants fancy fruit may not want so large a quantity, but will be willing to pay a good price for strictly first-class apples, and could not use the medium grade at any price.

We have reached that period in the production of apples when we must grow our fruit, and not simply allow it to grow itself, if we hope to get the highest prices. We should not forget the old saying, "There is plenty of room at the top." This applies to fruit growing as well as in other professions. This space at the top will not be filled by those who are standing by asking, "Is it going to pay?" But we shall see it occupied by earnest, enthusiastic men who plant and care for their trees not only for the money that they expect to receive for their product, but because they love the business and want to be among the living, growing trees. This wave of uncertainty which is passing of the country will not be without its good result. It may be the cause of many who are about to embark in the orchard business—merely from the standpoint of large returns with little labor—changing their plans, thereby saving them money as well as saving the business from the bad effect which invariably follows in the wake of every failure, whether that be a failure in banks or orcharding.

In conclusion, I want to say that I am firmly convinced that the right man on the right soil with the right varieties has a bright future in the production of high-classed apples; while the wrong man, even tho he may have ideal conditions, is likely to meet with disappointment and failure.

GRAFTING

Grafting is an art which requires considerable practice before the operator can be confident enough to work upon rare trees. For ordinary work in the home orchard, however, any man who is handy with tools and who uses care can graft with good success.

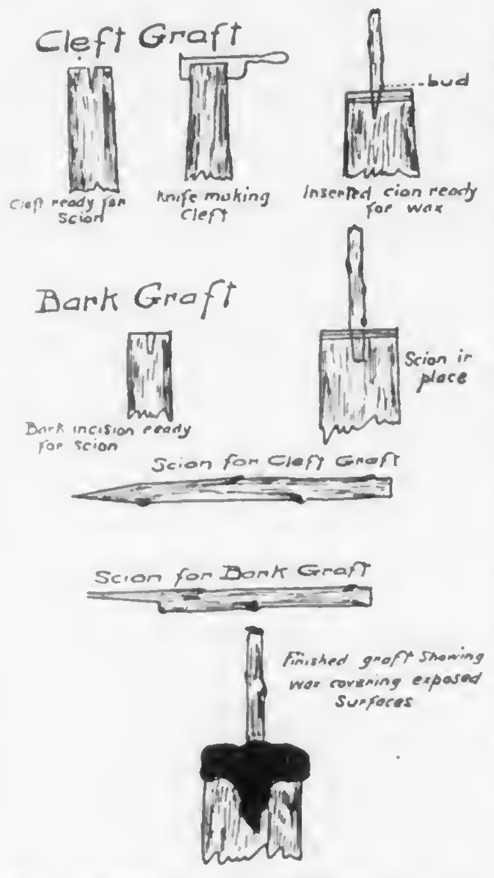
There seems to be an idea among farmers who have not given this operation any thought, that grafting is the crossing of varieties, and the fruit resulting from a graft will contain characters of both parents. Such an idea is, of course, wholly wrong, and such men have confused grafting with cross-breeding. The fruit resulting from a graft will have the same character as the cion, and the stock will have little if any influence upon it.

Grafting is done generally to change the variety of a bearing tree, but it may also be done to adapt certain varieties to uncongenial surroundings. If we have an old apple orchard that is worthless because the varieties are not marketable, we top work those trees, or graft more valuable varieties upon them and thus completely change the orchard from a commercial standpoint. Or, if we have a fruit that contains many high qualities but is not adapted to our particular soil conditions, we graft this desirable fruit onto the hardy one and obtain the desired results. Grafting is also done to apple and some other seedlings when they are in the nursery. It is a peculiar fact of nature that the chances are against an apple seed reproducing itself. It will probably produce a tree which will bear several different types of fruit and all of inferior quality. Therefore in order to be sure of any variety that variety must be grafted upon a standard seedling.

The principle underlying grafting is the union of the cambium layers, or the growing tissue, of the wood. The wood grafted upon is called the stock, and the wood grafted on is the cion. The stock and cion must bear a very close botanical relationship in order to make grafting possible, and the cambium layers of each must be in close contact. Since grafting is used by the farmer and orchardist mostly to topwork trees, this discussion will be confined to that operation.

In order to topwork a large tree, it is better to take three years to the operation than to finish the work the first year. Select limbs not over two inches in diameter and of good clear wood and saw these off with a sharp saw, making a clean cut. Trim the cut surface perfectly smooth with a sharp knift, and the limb is ready to be grafted.

There are a great many ways in which the cion may be set into the stock, but two are in most common use and these only will be discussed. The first, or "cleft graft," is generally used, but requires care. The limb is split with a wedge-shaped knife, especially designed for grafting, about two inches down the center. The cion, which is selected from tender wood, is tapered wedge shape at one end. This end is entered into the cleft in the stock so that one bud on the cion is at the surface of the limb, and at least two buds above that one. The fit should be snug and the entire wedge surface of the cion coming in contact with the cleft of the stock. Waxed string should then be wrapped about the stock, so as to prevent any possible movement of the cion. Wax must then be spread all over exposed parts of both stock and cion, and well worked in so that no moisture or fungus spores can get on or into these cut surfaces.



Grafting wax is made in the following way: Melt 4 parts by weight of resin, 2 parts of beeswax and 1 of tallow. Pour into a pail of cold water. Then grease the hands and pull the wax until it is nearly white, pulling much the same as with candy.

The second common graft requires a little more skill than the cleft graft, but it is sure and not so apt to result in rotting of the stock. Cut three or four wedge-shaped cuts in the bark on the stock, about one-quarter of an inch wide at the bottom and an inch long. Fit the cion into this grooved cut, tie and wax as before. The accompanying illustrations show both of these methods.

Two or more cions are set into each stock or limb so that at least one will grow. At the end of the first season the tree should be gone over and all cions removed except one in each graft, even if all grow, so that one good limb results from each graft. The string should also be removed before it binds the growing bark and retards circulation of the sap. Success in grafting depends upon making clean, straight cuts, getting the cambium layers of stock and cion in close contact and careful waxing.

SPRAYING DURING THE BLOOMING PERIOD

Spraying is beneficial when done at the right time, but like many other beneficial practices, it may cause great damage if done at the wrong time. One of the occasions when the application of poisons may prove very detrimental is during the blooming period. The effects may not be noticeable in the crop of fruit obtained, nor may the fruit grower who applies the mixture be the person who sustains the loss, yet there is, nevertheless, a loss.

The application of spraying materials at this time destroys large numbers of helpful insects, mostly honey bees, which are instrumental in fertilizing the flowers and thus making it possible for the trees to set a crop of fruit. This practice, which kills so many of the fruit grower's friends, is entirely uncalled for in most cases. If proper spraying has been done before the blossoms come out and the second application is made just at the time that the petals fall, all the insects and fungous pests will be controlled as well, unless it be the canker worm, as if an application was made during the blooming period, and none of the injurious effects will be experienced. In case of the canker worms, if a small amount of paris green is used in the first application it is doubtful whether there will be very much damage from this pest before the spray is put on after the petals have fallen, even if there is none applied during the blooming period.—H. W. Norris, Franklin Co., Pa.

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Reducing Distribution Costs

By Dr. CLYDE L. KING, University of Pennsylvania

It costs more to distribute food products than it casts to raise them. To put it the other way, the farmer gets for his produce less than one-half what the consumer pays for it. Just here is the proper point of attack in the much-mooted cost of living problem. So long as this situation continues, it ill-behooves the city dweller to talk about the inefficiency of the farmer. It is the city that needs to clean house.

As given in greater detail in preceding articles, the method of distributing food products that fixes producers' and consumers' prices is as follows: First, the professional huckster or commissioned agent buys from the farmer to sell to the wholesale merchant. He is paid for his services by buying as far below the wholesale price as possible. At a minimum, he increases the total cost of the goods from 9 to 25 percent. There is then added from 1 to 20 percent to the cost of the goods in freight to the wholesale terminal. Then the wholesaler deducts from 5 to 10 percent for selling it to the retailer, thereby adding on the average around 11 percent to the jobber's price. Then, for handling the goods and selling them to the consumer, the retailer charges from 30 to 100 percent increase of the wholesaler's price, on an average 45 percent. In addition, there is frequently, between the wholesaler and the retailer, at least one jobber, and often two. There is a natural tendency for the jobber to pay as little as he can; for the wholesaler to buy goods as low class and sell them as good class; for the retailer to boost prices up to where they will secure maximum returns.

A city store-man recently said to me, "Why spend time or thought about what the farmer can get for his produce? He is just like the rest of us. He is out for all he can get." To be sure he is. However, there is this significant difference between the farmer's ability to boost his prices and the retailer's and the commission merchant's power to manipulate prices: The forces fixing the farmer's price, as indicated in the first article in this series, are nation-wide in operation, and hence a single farmer, or, indeed, all of the farmers of a given state, can have comparatively little effect upon that price. But the wholesaler's misrepresentations, the prices paid by the retailer, the amount of food held back or destroyed, on the other hand, are determined by local situations, not by national forces.

Can this method of distribution be simplified, and can distributed costs be lowered? This question can be most thoroly answered by resolving it into three questions: (1) Can the wholesaler's commission be lowered, and wholesale abuses prevented? (2) Can the retailers' profits be reduced and their abuses abated? (3) To what extent and how can the middleman be eliminated so that the producer may sell as direct as possible to the consumer?

I. Can Wholesaler's Commission be Lowered and Abuses Prevented?

Thru the elimination of the risks due the method of assembling and distributing farm products, as shown in the first of these articles, it is only reasonable to expect that the commission charged by the wholesale merchant or the profit made by the wholesale jobber should be decreased. There is some evidence to indicate that there has been a slight diminution in such commissions and profits. But numerous other abuses have arisen, none of which need to be enumerated to farmers. Farmers are already too familiar with such practices as reporting goods to be sold as low grade when they were sold as high grade; reporting half the chickens dead when but 5 percent were dead,and the making of improper returns.

Another practice is to lower the published quotations on goods sold, so that it appears one or two cents below the price at which sales were actually made. This fact was brought out in the recent action of the federal government in imposing a fine on the market commission of Kansas City. Still another practice is to misrepresent time of a sale. For instance, if potatoes sell at 35 cents a bushel in the morning, and the price rises in the afternoon to 38 cents, the commission man reports sales as occurring in the morning, and pockets the difference.

These practices are of concern to all, because they mean lower prices to farmers, and therefore less purchasing power in the country; higher prices to consumer, want of confidence in each business center, destroying the business of the honest wholesaler and jobber because shipments are sent elsewhere, and destroying the confidence in the city to which goods are sent as marketing places, thereby decreasing selling facilities, and making it more difficult for producer, retailer and consumer to get proper prices for their goods, and to get goods at proper prices.

There is at hand a means by which such abuses may be reduced to a minimum. This method has been adopted in Texas, Oregon, Washington and Minnesota. Under it the wholesaler must obtain a license from some state authority, filing a bond to the state for the benefit of consignors. Under the Minnesota law, the commission merchant must indicate the exact minute and hour of the day when the sale was made. This was to avoid the abuses as to depressed quotations just indicated. Of particular importance are the provisions of the Washington law authorizing the Commissioner of Horticulture to hear and pass upon any complaints by farmers; requiring the books of such concerns to be kept open for inspection by the Secretary, who also has plenary powers of regulation and supervision. This law gives to the farmer a direct and inexpensive method for ferreting out to what extent he has been injured and for securing compensation for such injuries.

There is now before the Pennsylvania Legislature a bill providing for the licensing and bonding of persons engaged in selling agricultural products on commission. If payment for agricultural products consigned to such merchants shall not be made within 30 days after the receipt of same, the farmer may enter suit in any court for the recovery of sums due him. This act is good, so far as it goes, but it does not go far enough. It protects the farmer from absconding or defaulting wholesale merchants. It also protects the good name and business of the reliable commission man. It is specifically weak, however, in that the farmer must first go before a court to secure redress. This method of redress is too costly. The course is open to the farmer now. The only additional advantages that the law gives is the bond, so that the farmer may have something to levy upon in case the commission merchant does not have sufficient property in his own name. The act is also inadequate because it does not give the Secretary of Agriculture power to inspect the books. That is, the machinery for redress is so cumbersome and expensive that the small farmers usually can not afford to go thru the process. It might just as well have been made an administrative matter, and the Secretary of Agriculture given adequate power in the premises. Such laws elsewhere have met the approval not only of the farmers but also of reliable commission men as well.

Another remedy is to put terminal wholesale markets under the ownership and control of the municipality. The New York Market Commission is advocating a wholesale terminal municipal market for New York City. It believes that such a market will save **cartage expenses; for there,** as in Philadelphia, large quantities of food supplies are carried past their point of destination to a distributing center and then back again. In Philadelphia, the farmer who comes to the city to dispose of his products at Vine or Dock Street wharf, drives 10 miles thru the heart of the city. His goods are then purchased by a vendor who drives back the 10 miles and sells them to the consumers along exactly the same road that the farmer passed. Adequate terminal wholesale facilities might do away with some of this extra cartage, altho it will also add to it in other respects.

The terminal wholesale municipal market would provide a conspicuous place for producers to send to and an economic stand so that they can sell cheaper, make it possible for licensed gardeners and farmers to sell their articles of food, reduce the cost of distribution, provide sanitary conditions for handling food stuffs, permit segregation of live poultry, provide for storage of food in time of plenty against a time of scarcity, eliminate two classes of middlemen between the producer and consumer, and put the control of the food supply under the public authority. The plan will unquestionably make for the elimination of certain of the middlemen, will make for the payment of higher prices, because of the large number of buyers present, and will give to retailers a greater choice of goods.

II. Can Retailers' Profits be Reduced and Abuses Eliminated?

The situation as to the retailers of food products in the city can well be illustrated by the situation in Philadelphia. There are at the present time (1913) in this city about 490 chain stores. There are also 700 members of the Retail Grocers' Association. In addition to these two groups, there are, according to Boyd's Register, 4,169 independent grocers. As Dr. E. M. Patterson points out, "a fair statement of the situation, however, should include 10 percent, or 200, of the 2,000 butchers and retail meat dealers, as at least that percentage of them carry some groceries as a side line. In addition, there are 258 delicatessen stores, all of which compete with the grocers, and 1,923 'variety stores,' a large number of which also compete in many lines." For purposes of comparison, the chain stores and association stores may be included in the same group. This makes 1,190 "chain" stores as compared with 6,550 "independent" stores. Comparing the three groups we find that of the total 7 percent are chain stores, 11 percent are members of the Retail Grocers' Association, and 82 percent are "independent."

It is clear that the maximum point to which prices can be boosted by the retailers is that fixed by a subsistence wage on the part of the small "independent" stores. That is, the possibility in upward prices to the consumer is fixed by the cost of keeping up the average small, inefficient store thruout the city. The chain stores, and it must be remembered that there are all kinds of chain stores, as a rule keep prices up almost to the level charged by the large number of small stores. No one assumes that the chain stores, as a whole, are charging a just price in the sense that they charge the lowest price that would give them a reasonable profit. For the chain stores to lower their prices further would mean the driving out of the small stores. It is clearly evident that these small independent stores are slowly wearing out, despite the fact that there are today, in New York City, about 11,000 of them.

The chain stores first became a vital factor in Philadelphia about 1895. Their success has been due chiefly (1) to their cash sales which make possible a quick turn over of the capital invested; (2) to the elimination of losses from bad bills; (3) to their ability to purchase their goods in large quantities from the jobber or direct from the manufacturer; (4) to economies in distribution within the city, and (5) economies in management. The principle of retailing in the future will probably be to keep a limited variety of goods which can be turned over from day to day, with a minimum of overhead charges, small rents, knowledge of local customs, and few bad debts. That is, the small, independent corner grocery man, if he fails, does so not because he is small, but because he can not avail himself of the economies practiced by chain stores.

One of the most potent factors making for this is the fact that so many goods are being standardized as to quality and price; for on many such goods the price is fixed by manufacturers' agreements. By standardized goods I mean soups, many varieties of canned products and many kinds of breakfast foods which are known to all housekeepers. The inevitable result of this standardization in price and quality is the temptation for the small store-man to boost prices on perishable products, that is, on just those in which the farmer is most directly interested. To increase profits and get the maximum returns, the retailer is also under temptation to sell articles at under weight, to make over-charges, to misrepresent, to deteriorate and to pack falsely.

There are four schemes for eliminating the abuses of retailers and lowering the costs that now go to them as profits. First, public ownership and operation of retail stores; second, co-operative stores; third, price regulation; fourth, readjustment of existing transportation and distribution agencies so that the unnecessary handling by middlemen, and all unnecessary cartage, may be eliminated, economies for retailers effected, and information as to prices of food stuffs and profits disseminated, so that the consumer can guard himself against exploitation and abuse.

Public Ownership.—Public ownership is urged by some as the only solution of the problem. It is held that thru public ownership only can the desire for profits be taken away, and there substituted for it a desire for social approbation. This scheme, however, is as yet little more than a "wish," and that on the part of but a few of our people. The cost of the venture alone puts it out of the question for the time being.

Co-operative Stores.—The formation of co-operative stores is a second proposal. I refer here to real co-operative stores, owned and operated by the consumers, not the so-called co-operative stores recently adopted by certain corporations for their employes. Co-operative stores, owned and operated by the consumers, have back of them years of success, expressed in millions of dollars of dividends. In Great Britain alone there are today 2,700,000 members of such concerns, or, counting them as heads of families, one-fourth of the total population. Germany follows with 1,600,000; France, one-half as

(Continued on page 11.)

Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., April 14, 1913.

The butter supply was well sold up last week. Under a good demand the market of the current week will take care of choice stock at satisfactory prices. There was a good demand for fine eggs, and under restricted supplies the market ruled firm. Good dressed poultry was scarce and in strong demand. The market ruled steady and firm. Vegetables were without change, except potatoes, which ruled weak.

Butter.—Western creamery, 39c; extras, 37c; firsts to seconds, 34@36½c; special prints, 43@46c; near-by prints, 40c.

Cheese.—New York full cream, 16½@16¾c; skims, 8¾@11c, according to quality.

Eggs.—Candled, 21@23c doz.; extras, 20c. Current receipts at $5.70 per standard case.

Poultry.—Fowls, 17½@18½c; old roosters, 12@12½c; spring chickens, 18@19c; ducks, 18@19c; pigeons, 32@36c pair; turkeys, 19@20c.

Dressed Poultry.—Western fowls, 18@19½c; roosters, 15c; chickens, 18@19c; turkeys, 20@25c.

Vegetables.—White potatoes, choice, 70@72c bu. Onions, 75c@$1.00 bag. Cabbage, $[illegible]@7.00 ton. Lettuce, $1.50@2.50 basket. Cucumbers, $2.00@3.50 basket. Celery, 25@60c bch. Spinach, 80c@$1.25 bbl. Kale, 25@50c bbl. Egg plant, $1.75@2.50 box. String beans, $2.00@3.00 bu. Peas, $2.00@4.00 basket. Peppers, $2.50@3.50 carrier. Tomatoes, $1.75@2.25 carrier. Watercress, $1.50@2.00 100 bchs.

Fruit.—Apples, choice varieties, 25@75c hamper. $2.00@3.50 bbl. Cranberries, $1.25@2.[illegible] crate. Strawberries, 25@40c qt.

Hay and Grain.—No. 1 timothy, new, $17.[illegible]@18.00; No. 2, $15.00@16.00; No. 3 do., $12.00@13.00. No grade, $8.00@10.00. Clover mixed, No. 1, $13.50@14.00; No. 2 do., $11.00@12.00. No. 1 tangled rye straw, $13.50@14.00; No. 1 wheat straw, $10.00@10.50. No. 1 oat straw, $10.50@11.00. New shelled corn, No. 2 yellow, 61@61½c; No. 3 yellow, 59@59½c. No. 2 red wheat, $1.01½@1.02½; No. 3 do., 96½@97½c. No. 2 white oats, 41½@42c. Standard white, 41@41½c; No. 3 white, 40@40½c.

Hides and Skins.—Steers, abattoir, 15¼@16¼c; do country, 13¾@14¼c. Cows, abattoir, 14½@15c; do. country, 12½c. Bulls, abattoir, 12¼@12¾c; do. country, 11½c. Calf skins, Nos. 5 to 12 and up, $1.35@2.45; do. green, 13@14c lb.

Seeds.—Timothy, $3.15@3.25 bu.; clover, white, $25; do. crimson, $6.25; do. mammoth, $14.50; do. sweet, $13.00; do. alsike, $13.25; red top, per bu., $13.50; alfalfa, $7.00@10.00; Canada field peas, $2.35; vetch, $8.50; rye, winter, $1.37; spring, $2.25; soy beans, $3.25; barley, $2.50; buckwheat, $1.50; cowpeas, $3.00@3.25; millet, $1.90@2.75; oats, $1.25.

Coffee.—Rio, 7s, 11c; Santos, 4s, 12⅞c. Mild Coffee.—Cordova, 14½@17½c.

Provisions.—City beef, smoked and air-dried, 22@23c. Beef hams, 31@33c. Pork, family, $21.00@22.00 bbl. Hams, cured, 14½@15½c; skinned, 14¾@15¾c; smoked, 17@18c. Other hams, smoked, city cured as to brand, 16@18c. Picnic shoulders, 10@10¾c; do. smoked, 12@12½c. Bellies in pickle, 15@16c. Breakfast bacon, as to quality, 17@22c. Lard, refined, 11¾@12½c; do. in tubs, 11½@12c; do. kettle rendered, 11¾@12c. Tallow, prime city, 6⅞@7c; do. country, 7⅛c; do. dark, 5⅞c; do. cakes, 7⅜c.

Sugar.—Cut loaf, $5.15 cwt.; cubes, $4.60; powdered, $4.45; granulated, $4.35; standard granulated, $4.40; crystal A, $4.35.

Flour.—For 196 lbs., in wood, winter clear, new, $4.00@4.25; do. straight, new, $4.40@4.60; favorite brands, $4.85@5.25. Rye flour, Penna., $3.25@3.50.

BUFFALO PRODUCE

Buffalo, N. Y., April 14, 1913.

Butter.—Firm. Creamery, choice, 36c; choice dairy, 32@33c.

Cheese.—Steady. Fancy, 17½@18c; good 16½@17c.

Eggs.—Steady. State, fresh, 19@22c; western, 18@19c.

Dressed Poultry.—Active. Turkeys, per lb., 23@26c; fowls, fancy, 17@20c; chickens, 16@20c; old roosters, 13@14c; ducks, 21@24c; geese, 17@18c.

Live Poultry.—Firm. Chickens, 16@20c; ducks, 21@24c; geese, 17@18c; turkeys, [illegible]@23c; old roosters, 12@13c.

Vegetables.—Potatoes, slow. Home-grown, [illegible]@60c bu. Cabbage, $1.40@1.60 crate. Onions, 25@50c sack. Beans, green, $2.75@[illegible] hamp. Turnips, 75@80c bbl. Celery, [illegible]@75c doz. Lettuce, 40@70c.

Beans.—Quiet, steady. Marrow, fancy, $3.35@3.40; medium, 2.40@2.45; red kidney, $2.00@2.50.

Fruits.—Apples, $2.25@3.25 bbl.; 50@75c bu.

Honey.—Firm. No. 1 fancy, 17@18c; No. 2 w., 13@15c; dark, 12c.

Hay.—Firm. Timothy, choice, on track, $17.50; No. 2 do., $16.00; No. 3, $15.00; clover mixed, No. 1, $13.00@14.00; rye straw, $1[illegible].00; oat and wheat straw, $9.00@9.50.

Feed.—Weak. Spring bran, $19.00 ton. Standard mids., $19.50. Corn meal, $23.00. Gluten, $23.00. Hominy, $22.50. Oilmeal, $[illegible].75. Cottonseed meal, $29.50.

BALTIMORE PRODUCE

Baltimore, Md., April 14, 1913.

Butter receipts were ample under a regular trade and steady prices. The demand for strictly fresh eggs was a shade stronger during the week and all grades were firm. The poultry trade continued brisk and all good grades brought satisfactory prices. Fruits and vegetables were about as last week.

Butter.—Creamery, fancy, 35c.; do., choice, 33@34c; prints and blocks, 33@36c; Maryland and Penna. rolls, 22@24c; prints, 21@22c. Process, 29@30c.

Cheese.—Flat, 17½c; Daisy, 18@18½c.

Eggs.—Md. and Penna., firsts, 17½c; western, 17½c; southern, 16½c.

Live Poultry.—Hens, 17c; chickens, 22@[illegible]; old roosters, 11c. Turkeys, 24@25c. Ducks, 16@20c. Geese, 14@15c. Guinea fowls, 20@30c.

Dressed Poultry.—Turkeys, 24@25c; chickens, 20@21c; roosters, 11@12c; ducks, 20@22c; geese, 11@17c.

Vegetables.—Potatoes, white, 50@55c bu. Sweets, $2.00@2.50 bbl. Cabbage, $1.25@

PITTSBURGH LIVE STOCK

Pittsburgh, Pa., April 14, 1913.

The cattle market ruled slow all last week xcept on the very best grades. The top cate sold higher than two weeks ago, but the uality was much better. There were 130 oads on sale today. The market ruled slow nd 25 cents lower than last week's close.

ood to choice	$8.65@8.85
ood, 1300 to 1400 lb.	8.50@8.60
ledium to good, 1200-1300 lb.	8.35@8.60
idy, 1050-1150 lb.	8.30@8.50
air to medium, 900-1100 lb.	8.00@8.25
ommon to good fat oxen	5.00@7.00
ommon, 700-900 lb.	6.00@7.25
ommon to good fat bulls	5.00@8.00
ommon to good fat cows	4.75@7.25
leifers, 700 to 900 lbs.	5.50@8.00
ologna cows	4.00@4.40
resh cows and springers	20.00@80.00

Calves were in liberal supply all last week nd closed 25 cents per cwt lower. Today's eceipts were 1,000 head. Demand is light nd market slow and much lower.

eavy and thin calves	$5.00@7.00
eal calves	9.50@9.75

Hogs.—The hog market was steady all last eek under fair supply and a good demand. oday's receipts were 30 double-deck loads. he market was 5 to 25 cents higher.

rime heavy	$9.50@
rime medium weights	9.60@
eavy mixed	9.70@
est heavy Yorkers	9.80@
ight Yorkers	9.85@
igs as to quality	9.80@9.85
ommon to good roughs	8.25@8.60
tags	7.00@8.00

Sheep and lambs were in good receipt all eek and demand was good, but prices were 5 cents lower on sheep and 15 cents per wt, lower on lambs. Today's receipts were 0 double-deck loads. The market ruled ow and lower.

rime wethers	$6.40@6.50
ood mixed	6.10@6.40
air mixed ewes and wethers	5.25@5.85
ulls and commons	3.00@4.50
pring lambs	10.00@13.00
ulls to choice lambs	4.50@8.00
lipped lambs	5.00@8.00

demand, but poorer grades are not wanted at satisfactory prices. While the straw receipts are light the demand is slow and the market is dull. No. 1 timothy, $15.75@16.00; No. 2 do., $13.50@14.50; No. 3 do., $10.00@12.00; No. 1 light mixed, $13.50@14.00; No. 1 clover mixed, $13.50@14.00; No. 2 do., $10.00@12.00. No. 1 clover, $13.00@13.50; No. 2 do., $10.00@12.00. No. 3 prairie, $10.00@10.50; No. 4 do., $7.00@8.00; No. 1 oat straw, $8.50@8.75; No. 2 do., $8.25@8.50; No. 1 wheat, $8.50@8.75; No. 2 do., $8.25@8.50. Ear corn arrivals are in strong demand. Market stronger. No. 2 yellow, 61@62c; No. 2 high mixed, 59@60c. Shelled corn receipts are light and uncertain. Market irregular. No. 3 yellow natural, 59@60c; sample, 57@58c. Oats are irregular, both as to receipts and price. Quotations are not expected to last after receipts come more freely. No. 2 white, 41½@42c; standard, 40½@41c; No. 3 do., 39½@40c; No. 4 do., 37@38c. The demand for middlings is very slow. Market dull. No. 2 white mids., $23.50@24.00; No. 1 brown mids., $21.00@21.50. Winter wheat bran, coarse, $21.50@22.00; do., medium, $20.50@21.00.

ELGIN BUTTER QUOTATION

Elgin, Ill., April 14, 1913.

The quotation committee of the Elgin Board of Trade this afternoon declared butter firm at 33c a pound.

NEW YORK MILK QUOTATION

The wholesale milk price is $1.71 per 40-quart can for class C; class B, $1.81.

TOBACCO MARKET

The market situation continues rather unfavorable, the demand being very limited and prices even lower than in previous weeks. Sales were made as low as $5, and very few if any were above $8 per cwt. Thus it will be seen that the remaining 10 to 15 percent is finding a very poor and unprofitable market. Such sales are unsatisfactory, not alone because they are so much lower than earlier in the season, but because they leave not a ofit but an actual loss to those who must ac pt them. Reasoning from the theory that t is an ill wind that blows nobody good," is stated that the Miami Valley (Ohio) lamity will create an increased demand for nnsylvania leaf and thus increase present ices.

It is claimed upon good authority that this st unsatisfactory situation is more the re lt of over-production than of any other con ion. Accordingly growers are arranging reduce the acreage of the present year. It proposed to cut the crop about 25 percent, ich, in Lancaster County alone, would an a reduction of some 4,000 acres. Evi ntly the acreage will, of its own accord greatly reduced, for at present prices there little if any profit left the grower. Po oes, corn and the consequent meat and iry products will, in many instances, be stituted for tobacco. On the other hand, alers claim that farmers have often eatened to grow less tobacco, only to nt the usual acreage when the time comes, l that every planter will be anxious for his ghbor to reduce his product, but he him f will raise the usual amount, and s be in position to benefit by his neigh 's curtailment. It is here that the or nization is needed, and it is encouraging to e that several organizations are being per ted and others formed in various parts the state. Prominent among those we e the Lancaster County Tobacco Growers' sociation, which at a recent meeting took asure for concerted action in the matter of eage as well as other important measures ecting the tobacco grower.

The physiological and moral effects of the of tobacco have been discussed ever since was used by civilized people. A substan l agreement has been reached among scien ts that it is not the pernicious drug it was e supposed to be. It is also agreed that principal effect is upon the mind and not on the body—a sort of handy relaxation, ting the user and renewing him for further ties—without physical injury. Unlike ne luxuries, the use of tobacco does not aken the moral fiber or so fasten itself on the user that he can not discontinue habit.—H. E. Tweed, April 14, 1913.

GOVERNMENT TIMBER SALE

The Department of Agriculture is adver ng for sale two large tracts of timber, ag gating 750 million feet, in the federal est reserves in Idaho. Bids will be re ved up to and including June 1, 1913. nimum prices, which will be considered on erent species and in different locations e been established, ranging from $2.50 thousand feet for western yellow pine in st accessible places, down to $1 for the st valuable and least assessible. These es will be subject to revision every four rs.

Extending the Uses of School Houses.—It proposed in New York to amend the law throw open public school houses and unds to other purposes when not in use by school. A bill now before the legislature owers voters of a school district to au rize the use of school buildings and unds for agricultural, athletic and social poses, to purchase necessary equipment supplies for these purposes, and to em y persons to give instruction and to or ize, supervise and conduct athletic, play und and social center activities. School ses and grounds may thus be devoted to following uses: Social, civic and recre nal meetings, open to the public and free, ess for charitable or educational purposes, not for benefit of any exclusive society organization. The buildings may be used instruction in any branch of education, public library purposes, for polling places for holding political meetings when au rity is given by the voters of the district s is a step in the right direction, and it is be hoped, as it is confidently expected, t the bill will become a law.

Tubercular Cows Killed.—The report of In ector McNabb, of New Jersey, for March, ws that 14 imported cows reacted to tuberculin test and were slaughtered. ere were 18 native cattle slaughtered, ir appraised value aggregating $711. The rts of incoming cattle show 36 reactors ore shipment, which were slaughtered in ir respective states, and these added to 14 killed after arrival gives a total of 50 d from which New Jersey has been ef tually protected. During the month 1,008 ported cows were tested before entering state and 807 after entering, the ship s paying $291 for the tuberculin tests.

MUTILATED PAGE

Live Stock

DUAL-PURPOSE CATTLE

As a rule, the beef breeds are considered of little value to the dairyman, while most of the dairy breeds are handicapped when it comes to the production of good beef. In this respect the Shorthorn has a unique place. While steadily holding its own in the best beef markets, it has no mean place in the dairy records. Good Shorthorn cattle are never laughed at, no matter into what market they are run. They have competed too often—and successfully— with the very top breeds for both purposes.

Several years ago at the Wisconsin Experiment Station, the three best Shorthorns gave an average net profit on their milk and butter of $67.33; the three best Guernseys of $64.31; the three best Jerseys of $59.05 during one year. All received the same care and, while these are not record-breaking figures, they show that it was good care. Assuming that the young dairy calf is as acceptable in the veal market as the strictly beef breed, the Shorthorn still has this decided advantage. If some accident destroyed her as a milker, she could any time be converted into beef that would be judged favorably in the strictly beef market, where she would, of course, be worth the most money. The Shorthorn cow is never restricted to either the beef or the dairy markets alone. Some Shorthorns may be best in one, and some in the other market. No one despises her at either place.

Some years ago a Shorthorn cow took first at one of the leading English dairy shows. The next year the same cow was given first place among the cows shown among the beef breeds at the Fat Stock Show. This effectually answers the contention of some that there is one line of beef and one of dairy Shorthorns, but no such thing as a combination cow in this or any other breed. Less direct, perhaps, but still evidence along the same line, is the experience of the Iowa Experiment Station with a Shorthorn cow. In 11 months she produced 312.5 pounds of butter from milk testing 3.59 percent fat, at a cost of $20.56 for feed; the calf that she produced made eventually a 1,500-pound steer of good feeding type. Again, we are not claiming these to be exceptional records; they have been surpassed by other breeds many times. They have seldom, however, both been surpassed at once by the same breed; doubly seldom by any but the Shorthorn.

The trained specialist may find some other than the Shorthorn breed more profitable, and may surpass her records with his special-purpose breeds. For the average farmer, tho, who wishes to produce butter, milk and beef, the Shorthorn has never been surpassed. What other dairy cow dares face the best of the beef breeds at the fat stock shows? What other beef cow can be successfully placed beside the special dairy queens? In both of these classes, altho the Shorthorn may not always be at the top, she is so near there that she continually threatens the laurels of both the beef and the dairy special breeds.

Not so very many years ago—the older farmers are still talking about it—eastern farms produced a breed of high-grade cattle that were almost uniformly good producers at the feed bin and the pail. None of them perhaps were pure bred. They were by no means uniform in color. Almost any middle-aged farmer can think back to the herd on the old farm and remember with a thrill of pride the production of "Old Spot," of "Whitey," of "Roan-face," "Reddy," or "Old Brin." Each name revives a memory of some widely different color, but the productive powers at the pail were almost uniformly good. There are few dairy cows today, on ordinary farms (outside of the highest priced specialists), that can compare in steady production with some of those old herds. There are few herds outside of the most strictly beef-producing establishments, where the beef production excells that sent out from some of those old farm herds. There are very few modern herds which produce as much and as good milk, along with good steers, as these old herds produced. This is particularly true when we consider the difference between the pasture feeding of yesterday and the rich grain-feeding of today.

Most of those old dairy cattle—nine-tenths of them at least, were Shorthorn grades; in fact, there were very few cattle then in the East which did not carry some proportion of Shorthorn blood. They were not special-purpose herds as they are now; and yet, in a sense they were—the special purpose, all-round beef and dairy cattle of the farm.—Xeno W. Putnam, Crawford Co., Pa.

MUTILATED PAGE

Clip All the Wool

and get longer, better wool that will bring the highest price.

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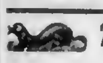

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Grange

This department is conducted by R. P. Kester, Lecturer of Pennsylvania State Grange. Notes, queries, comments and news of grange work are invited from readers. Obituary notes and news of purely local interest can not be used. Address all communications for this department to R. P. Kester, Grampian, Pa.

EDITOR'S NOTES AND COMMENTS

We are not what we think we are,
But, what we think, we are.

There's no defeat in life, save from within.
Unless you're beaten there, you're bound to win.

If you want to be miserable,
Think only about yourself.

An active interest in the welfare of your community is the surest way to bring happiness, contentment and improvement to yourself.

If the brains and energy that have developed the cities had stayed in the country and been applied there, agriculture and rural life would be so desirable that no one would wish to leave it. However, there are still enough of both in the country to do the work that is needed in this direction, once they are interested and energized.

My message shall be an appeal to enthusiasm in the things of life, a call to do the things we love, and to love things because we do them, to keep the eyes open, the heart warm and the pulses swift as we move across the field of life.—David Starr Jordon.

It should be borne in mind that the grange is engaged in constructive, uplifting work, quite as much as in attacking undesirable institutions and customs. The slur that we are chronic kickers is sometimes cast by the critics—those who are kicked. It has always been the lot of the pioneer and reformer to be maligned and censured and misunderstood. However, the chief work of the grange is constructive, not destructive. It is a band of helpful workers, not simply an organization of protest.

THE GRANGE AND THE COMMUNITY

The following is reported in the Grange Review as being from an address delivered by State Master H. J. Patterson, of Maryland:

The grange should have a distinct mission in every community, and it should so exert that influence that it will be recognized as a necessity. It should take its place next to the church and the public school and supplement their work. The grange should be a real force in promoting the welfare of the community along social, educational and financial lines. The following are some of the things it might undertake:

1. The grange should become the social center for the community, and supply all that is not supplied by the church.

2. The grange should be the agricultural high school of the communities that have only grade schools, and thus give the boys and girls of 15 to 21 an opportunity to systematically prepare for their work.

3. The grange should be the center for agricultural demonstrations in its community, and thus offer an opportunity to learn better methods by seeing and doing.

4. The grange should give to each community a farmers' institute and a farmers' quiz each month.

5. The grange should be the women's Home Economics Club.

6. The grange should be the medium for study and practice of better methods of sanitation, and thus promote the health of the country and conserve one of our greatest resources—human life.

7. The grange should be the literary and debating society of the neighborhood.

8. The grange should be the center where the people may discuss and become informed on all school, social, civic and political questions from a non-partisan point of view.

9. The grange should be the medium thru which a community should systematically co-operate in raising, advertising and selling farm products.

10. The grange should be the community co-operative breeding association, for the improvement of animals and seeds.

McSPARRAN'S GRANGE NOTES

Health and Marriages

I see by the papers that our state legislature is considering a bill which "provides that no marriage license shall be issued except upon written and verified application, containing a statement that neither of the persons is afflicted with a transmissible disease. The applications are to be uniform thruout the state, on a blank to be prepared by the state department of health. No license shall be issued when either of the applicants is an imbecile, epileptic or of unsound mind. Licenses shall not be issued to persons under the influence of liquor or any drug. No license is to be valid for more than 60 days. If persons attempt to evade the law by marrying in another state, the bill provides that such marriage shall be void in Pennsylvania."

If this bill is correctly reported, it takes a very narrow view of the danger to society from transmissible qualities of parents. The bill is entirely too drastic, in that it would "put the cart before the horse." This bill would naturally follow a series of bills, none of which have been made law. It is going into private affairs before the public affairs have been attended to. It is a known fact that the use of intoxicating liquor has an effect upon the children of such parents, both from the moral breakdown of the parents and from the greater liability to disease induced by the transmission of a weakened constitution, and yet no bill has been passed to take away from society the damning influence of this useless and debauching stuff.

The liquor traffic is a recognized legitimate field of legislation not nearly so private or sacred as marriage that has largely been left untouched in Pennsylvania. And yet, when the state thru the license system has made a diseased person, it would turn upon the person of its own creation and say, "Because you are diseased you shall go a wanderer thru this life. You shall not know the tender sympathy and care of a wife. You shall not have a home of your own, such as God intended men and women to have. You shall not have the joy of children to to love, to work for and train, and as the years go by you shall not have a descendent of your own blood to lean upon as the shadows of evening lengthen upon your life." Surely they have gone at this thing wrong end first.

Or, take the sweatshop, the factory or the crowded tenement. In each of these there are abundant cases where a human being is compelled to live or work day after day in an environment that reeks with the elements that mean diseased and weakened manhood and womanhood, and in turn a like condition in the progeny. But has the law corrected the sweatshop? Has factory life been put upon a basis before the law where no damaging influence can reach the worker? Has the child of the tenement received the anxious solicitude that the passing of this bill would indicate is bad for the unborn child?

When these matters have all been properly handled and a lot more of a similarly general character, it will be time enough for such a law as this to be considered. I say considered, because even if the physical condition of every member of society were made as perfect as the law could make it, the question would still come as to whether physical disability should be made the test for the elimination of the sacred bond of matrimony. Physical disease affords to a large extent its own protection to society in the early death of its progeny. But what about the mental and the moral derelict? According to this bill, a person with a transmissible disease is forbidden to marry, but a person with a mind so foul that he can scarcely think a decent thought, with a moral sense so degraded as to scarcely indicate the presence of a soul, is allowed to inflict his progeny upon a helpless world, just because he has no physical disease that is transmissible. I doubt very much the advisability of putting restrictions of this character by law upon marriage at all; but surely if it must be done, it should be done upon a higher plane and a broader view than simply man as a physical being. I can conceive a state of society in which this kind of a law would probably be permissible, but it is not the condition of society today.

When Jesus Christ said, "What therefore God hath joined, let no man put asunder," He was referring not so much to the legal bond as to the bond that was established instinctive in the race, which we call love. That peculiar bond that man never has for a man, or a woman never has for a woman, and yet a tie so powerful that it links a man and woman together so closely that the individuality of each is merged into one. Whenever legislation attempts to put any restraint upon that God-given instinct, it should only be enacted with the greatest care and from the viewpoint of mankind as a being with body, mind and soul. The chances are that if the law takes care of the general outside environment of the family, the God-given faculty of choice will care for the internal preservation of the home.—John A. McSparran.

Kelley Memorial.—Fredonia Grange, which bears the honorable number one, being the first grange organized by the late O. H. Kelley, by a resolution adopted at a recent meeting proposes that a suitable memorial be erected to his memory at Washington, and suggests that a committee be appointed by the National Grange at its next annual meeting to decide upon the amount of money to be put into the memorial and apportion the amount among the granges of the country. The resolution proposes the erection of a monument, "to be surmounted by a marble or granite bust of our honored founder, to occupy a suitable place in the building or grounds of the Capitol at Washington as a lasting memorial of his life and work."—D.

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Established 1880. Published Every Saturday.
Entered as second-class matter at the postoffice at Philadelphia, Penna.

The Lawrence Publishing Co., Proprietors
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TERMS OF SUBSCRIPTION

One Year	52 copies to one person	$0.50
Two Years	104 " " " "	$1.00
Three Years	156 " " " "	$1.25
Five Years	260 " " " "	$2.00

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Philadelphia, Pa., April 19, 1913.

THE COMMISSION BILL

Farmers are wondering what has become of the bill to bond commission men, introduced in the Pennsylvania legislature early in the session. As pointed out in the article on page 10 of this issue, this bill has a number of weaknesses as a general remedial measure, but it is a big step in advance in protecting shippers of farm produce and removing abuses in present commission practice. The bill is still in the agricultural committee, and a sub-committee is deliberating on it. There is still an opportunity to secure favorable action on it, and possibly secure amendments to it to give it the desired efficiency. Every farmers' organization, as well as every individual shipper should be back of this bill. Read what Dr. King has to say of the operation of the Washington and Minnesota commission man laws, and then write your representative what you want in this state.

THE TARIFF BILL

The new tariff bill redeems the administration pledge to a sweeping downward revision. Some industries will be hard hit and general results will be far-reaching, but the people are given what their votes last fall indicated they wanted. Reports from Washington indicate that the President has been in absolute tho harmonious, control of the committee work in framing the bill, and those in close touch with the situation believe that the bill will be enacted with few minor changes. The features of the bill are given elsewhere on this page. It will be noted that it is an evident honest effort to decrease cost of necessities of life, curtail special privilege to special interests and reduce exorbitant protection so far as these things are possible in a general tariff bill. The so-called jokers and the involved construction of the old law are removed, and duties are clearly defined and specifically applied. While the free list is greatly extended, the bill as a whole is still a protective measure, which is contrary to Democratic doctrine but thoroly consistent with the pre-election policies of the President. It carries out his expressed desire to decrease rates by degrees and thus secure the desired results without endangering business prosperity. As viewed from the standpoint of a redemption of party and platform promises, the bill is all that could be expected, and is probably the most honest and conscientious effort at just tariff adjustment that has been made in many years. Its greatest weakness lies in the uncertainty of its effect. Its framers admit that they do not know whether the new rates will remedy the evils aimed at, and that they can not know until the law goes into effect and results are observed. Provision has been made in certain schedules for readjustment from time to time, as results warrant. The entire bill is an experiment, as every tariff bill must be until the whole business of tariff making is put upon a systematic, scientific basis thru a tariff commission.

COLLEGE-TRAINED FARMERS

Another boost for college-trained farmers is found in the recently-developed fact that the Hood River apple section of Oregon has more college men in proportion to the total number of inhabitants than any other community in the country. The high degree of agricultural development in this section is well known thruout the country. Whether its success depends upon the training of the men who have developed it or not, the section has profited by methods which any agricultural community might do well to follow. It has developed a community spirit which extends over the entire section. It has demonstrated that co-operation in improving the condition of production, and following that with co-operative methods of harvesting, grading and marketing returns rich profits not only to the community as a whole, but to every individual of the community. It has shown that good business methods for the entire community are good business for every inhabitant of the community. Starting with a soil and climate naturally favorable to the production of apples of perfect shape and bright colors, the Hood River farmers have developed a wonderfully successful business on these natural advantages, not as individuals, but as a community. As a community they perfected their irrigation system. As a community they instigated laws compelling pruning, spraying and other operations to insure best growth of Hood River apples. The careless or indifferent individual is not permitted to endanger the health of his neighbor's trees by allowing insects or fungous diseases to flourish in his own orchard, and he is not permitted to injure the reputation of the Hood River product by producing and marketing inferior fruit. As a community they have enforced regulations establishing a high and uniform quality in grading and packing their apples. As a community they have perfected systems of advertising and marketing which meets all competition and yields a profit on careful, methodical production. This is the great practical lesson which is to be drawn from the Hood River farmers. By organized effort and practical co-operation they have made the best possible use of natural advantages and have overcome natural disadvantages. They have used the natural perfection of shape and color of their apples to overcome the natural disadvantage of distance from market and comparative inferiority of quality of fruit. This result has required good farm skill, good business management, and above all, a willingness to merge interests and unite in working for the common good. The latter quality is the one most often lacking in farm communities. If its presence in the Hood River district is due to an openness of mind, a broader conception of the possibilities of community effort, developed thru a college training, then give the college the credit. This is the field and purpose of the technical college. It must train its men, and we believe it does train its men, to adapt themselves to new conditions. The college-trained farmer may have trouble in demonstrating his ability to surpass the practically-trained farmer in the particular field and environment in which the latter has had his training, but his college work should, and does as a rule, give him a broader perspective and a wider range of adaptability. The future in farming will have need of men who can look beyond established custom and precedent and adapt new methods and new ideas in improvement of marketing, social conditions and general agricultural development to supplement the practically-trained farmer's ability in production. This is the rich field awaiting college-trained farmers.

MOISTURE CONSERVATION

The conservation of soil moisture often appears a matter of needless concern in a wet spring. When the spring rains are falling and we are impatient to get into the fields, we are naturally more anxious to rid the soil of excess moisture than take steps to conserve it. But the water that is permitted to escape by evaporation and drainage in the spring may be badly needed for development of the crops in June and July, and the careful farmer will use every means to hold as much of that moisture as possible. Deep plowing, followed immediately with the harrow to break up the smooth, compacted furrows left by the plow will be the first step in insuring abundant moisture when it is most needed. Then frequent harrowing of the plowed ground to keep the surface soil broken up and establish the needed mulch while waiting for planting and seeding will be a profitable insurance on the crop to come. The purposes and advantages of frequent cultivation are growing on us every year. The old idea was that cultivation was beneficial chiefly if not solely as a means of destroying weeds. Now we know that weed destruction is but one of the advantages and aeration of the soil and conservation of moisture share equally in the important objects of careful and frequent tillage.

REDUCING DISTRIBUTION COSTS

(Continued from page 10.)

many; Austria, 500,000; Russia, 300,000, and in Italy and Switzerland, a quarter of a million each. Denmark, Sweden, Belgium and Finland have smaller numbers, altho a larger percentage of the population.

Such stores in America have thus far had a rather gloomy history. Where a score have started, one has succeeded. The probable reason for the failure of the Farmers' Alliance stores, however, was that they were organizations of country buyers and rural dwellers, all of whom have a poorly developed feeling of class solidarity and, therefore, little loyalty to a store because it was their own. It is to be noted, however, that the co-operative store plan ameliorates conditions only for its members. Save in so far as such stores can become numerous enough to affect competitive conditions in the average city store, they will be of no advantage to those non-members who must, thru need, avail themselves of the lowest prices.

Price Regulation.—A third group advocates a price-fixing industrial commission with power to fix food prices at a point that will bring reasonable returns on the investment, and with power to prevent abuses in weights, measures and quality. It is proposed that this commission be endowed with powers similar to those exercised by the Interstate Commerce and Public Service Commissions over the rates and service of a common carrier. The legal, as well as the practical results of this proposal, however, must await greater consolidation of the stores into large competing units; for no commission could legally fix a price to be charged in each of the stores now existing in Philadelphia, for instance, and have that a reasonable price.

Should the food retailing business of our cities be divided up in the future, as it promises to be, among a very few competing chain companies, a price-fixing commission will not only be desirable, but essential to the protection of the public. Nothing can hasten this more rapidly than the creation of a chain of co-operative stores, for, since the economies of the chain store are so evidently greater than the economies of the small independent grocery-man, the injection of a chain of co-operative stores would inevitably mean the driving out of the small, independent grocery-man, and hasten the day when the consumers would be depending upon the will of a small number of monopolies. But as schemes of price regulation of food stuffs by an industrial commission offer little hope of immediate adoption, they can not be looked to as a remedial agent for present conditions.

Readjustment of Transportation and Distribution Agencies.—The fourth plan is to readjust existing transportation and distribution agencies so that all unnecessary handling and cartage may be eliminated, and all the information disseminated essential to bringing a well-informed producer and a well-informed consumer as close together as possible. The third question in the reduction of distribution costs, to what extent and how can the middleman be eliminated so that the producer may sell as direct as possible to the consumer, will be discussed in the next article of this series.

NEW TARIFF BILL

The new Democratic tariff revision bill, introduced at the opening of the special session of Congress, April 7, is a direct effort to redeem the party platform pledges. The most striking features of the bill may be summarized as follows: Removal of all tariff from many articles of food and clothing; broad reduction in the rates of duty on all necessaries of life; an increase of tariff on many luxuries; a new income tax on net incomes of over $4,000 per year. There is a long free list, but on manufactured articles the bill is a protective measure, with great reductions in present rates.

Comparative Rates.—The following table shows the comparative reductions made in tariff duties upon necessaries, both the present and the proposed tariff having been reduced to an ad valorem basis:

	Present Law	Proposed Law
Cream of tartar	25.45	17.87
Medicinal preparations	59.05	31.11
Castor oil	33.19	15.00
Wash blue	23.59	15.00
Saltpeter	9.27	6.87
Common soap	20.00	5.00
Saleratus or bicarbonate of soda	21.51	8.50
Sal soda, washing soda	20.93	16.25
Borax, refined	21.22	1.31
Lime	9.17	5.00
China and crockery, not decorated	55.00	35.00
Grindstones	9.21	8.12
Bicycles	45.00	25.00
Pocket knives	77.68	35.00 & 55.00
Razors	72.36	35.00 & 55.00
Scissors and shears	53.77	30.00
Knives and forks	41.98	27.00
Furniture	35.00	15.00
Cattle	27.07	10.00
Macaroni, etc.	34.25	23.81
Rice, cleaned	54.05	33.33
Eggs	36.38	14.29
Stocks, etc., of fruit trees	54.41	27.58
Mineral waters	43.56	30.00
Spool thread	22.95	15.00
Cotton cloth	42.71	26.69
Cotton clothing	50.00	30.00
Stockings, hose and half hose, selvedged	75.38	50.00
Men's and boys' cotton work gloves	89.17	[illegible]
Knit shirts, drawers etc., underwear	60.27	25.00
Collars and cuffs	49.10	30.00
Blankets	72.69	25.00
Flannel	93.29	30.00
Clothing, ready made	79.56	35.00
Women's and children's dress goods	99.70	35.00
Sewing silk	25.00	15.00
Wrapping paper	35.00	25.00
Books	25.00	15.00
Brooms	40.00	15.00
Matches	27.59	11.00
Harness and saddlery, other than leather	35.00	20.00
India rubber, manufactures of	35.00	10.00
Lead pencils	39.00	25.00

Free List.—The free list includes the following articles: Raw wool, meats, flour, bread, boots and shoes, lumber, coal, harness, saddlery, iron ore, milk and cream, potatoes, salt, swine, corn and corn meal, cotton bagging, leather, agricultural implements, wood pulp, bibles, printing paper valued at less than 2½ cents per pound, typewriters, sewing machines, type machines, cash registers, steel rails, fence wire, cotton ties, nails, hoop and band iron, fish, sulfur, soda, tanning material, acetic and sulfuric acids, borax and lumber products, including broom handles, clapboards, hubs for wheels, posts, lath, pickets, staves and shingles.

Income Tax.—It is estimated that the enforcement of these reductions will cause a deficit of $80,000,000 in the government revenues. To make this up, a graduated income tax is provided, imposing a tax of 1 percent on net earnings in excess of $4,000 per year. An additional 1 percent is imposed on earnings in excess of $20,000, 2 percent on earnings over $50,000 and 3 percent on earnings over $100,000 per year.

STATE CAPITAL NEWS

Adjournment.—In spite of the fact that neither branch of the assembly has been willing to fix a date for adjournment, it is believed that May 22 or May 29 will see the final session. The house committees have shown a disposition to report out too many bills of questionable importance, which retards some of the most important remedial legislation. Only within the last fortnight have bills of importance to the agricultural interests of the state received final action in the house. The assembly faces a problem which has not confronted any legislature in a decade. To act on all bills, to pass the 400 odd appropriation bills and clear up measures from the senate or upon which the senate may require conference means a slaughter of inconsequential legislation and laceration of feelings. The proposition is how to clear up the work and get the best results for the state.

Road Bond Issue.—Governor Tener's statement that the next legislature will be required to pass the legislation necessary to carry into effect provisions of the $50,000,000 bond issue means that nothing can be done about this until after the people vote upon the proposed amendment to the constitution. In other words, the next administration will spend the money. The state will have to wait at least 15 months after it ratifies the amendment, in case it does, before a single bond can be sold and any contracts be let. Meanwhile all state road work will have to be cared for out of the current revenue for the next two years, and $4,000,000 or $5,000,000 must be carried in the general appropriation bills this year to provide for state highway construction and provision made for repair work, together with an adequate appropriation for aid of townships. The seriousness of the road situation is not realized by many people. The state revenues available for appropriation by this general assembly amount to $55,000,000, possibly a little more. Out of this must come the money to run the state government, or around $30,000,000, including the $15,000,000 for schools and the highway work. Then the charities are asking for about $17,000,000. Requirements for care of insane and other objects are higher than before. The only way bonds could be sold before the next legislature for road work, would be by legislation for a special session next January, if the bond issue passes, and the Tener administration is not likely to call the legislature, judging from the governor's statement.

Taxation Reform.—If, instead of quarreling about changes in the election laws and matters which are purely political, the members would get together on changes in taxation and assessment laws the financial condition could be improved. Half a dozen measures aimed to secure more adequate or just valuations of lands have appeared, but none has gotten far. The bill, which proposed a state system of assessment, was received with the request that the subject be studied by the State Taxation Commission, if it is continued. There does not seem to be any settled policy on proposed taxation laws, altho $100,000 of state money was spent for purposes of study and drafting. The bills are still in committee of the house, and not much has been heard about them. The Grabe bill, proposing to tax all property subject to state taxation, except mortgages on real estate, for road purposes, bids fair to have a hard road in the senate. It offers about the best solution for getting money to improve township highways, if the Jones township highway bill is to go thru. Pennsylvania has spent a lot of money for study of taxation, and it ought to get the benefit.

Agricultural Bills.—Aside from the pure seed bill, the bills for agricultural experts, and that providing for vocational training in the public schools, appear to be the only other bills of importance to agricultural interests to get to the senate at this time. The vocational bill is being held up until it can be ascertained what it will cost, altho numerous estimates have been made. The house is about sending to the senate the Gibson bill for removal of trees affected with tree diseases and to authorize counties to appropriate money for agricultural extension work, the Williams bill for the state to send two delegates to Europe to study rural credits, an appropriation of $2,400 being carried; the Jones bill to create the State Country Life Commission; the Peachey bill, providing for destruction of noxious weeds before they bloom and their removal from along roads. The bill to increase salaries in the agricultural department is out of committee, but the signs are not good for the creation of the two new bureaus of statistics and poultry.

Pure Lime Bill Defeated.—The bill regulating the sale of lime for fertilizers went down to defeat in a slim house last Thursday but may be reconsidered. The objection seemed to be more to the system of confusing licensing and tagging than to the general provisions for giving farmers what they pay for in the way of lime.

Fight Over State Fair.—The question of whether Pennsylvania shall have a state fair is now up to the house appropriation committee, the senate having passed the Beidleman bill providing for such an exhibition. In the house a similar bill presented by E. E. Jones, of Susquehanna, is pending. The managers of a number of county fairs have entered vigorous protest on the ground that a state fair would interfere with attendance and interest in small fairs. The advocates of a state fair take the broad ground that Pennsylvania, with its important agricultural interests and general progressiveness in conservation, improvement of agriculture and its allied industries, can not afford to lag behind New York, Illinois, Ohio and other states. They will bring men here to show how well such exhibitions have operated in sister commonwealths and to present, from the accounts of the Columbus and Syracuse fairs, the fact that they make a profit for the state. The opposition to the fair comes chiefly from members whose counties have local fairs.

Stone Bill in Senate.—Consideration is being given in the senate to the bill to provide a code for the eradication of diseases among domestic animals, which passed the house after a fight. It is probable that it will be passed. It is claimed by its advocates that it will clear up many points of dispute and enable a smoother operation of the law, altho there will doubtless be objection to it.

Auxiliary Bills Passed.—Indications are that the Williams bills to create state auxiliary forest reserves will become law, altho legislators from counties which have large lumbering operations plan to continue the fight against them in the senate. These bills were drafted by the Pennsylvania Conservation Association, and are designed primarily to reforest the mountains and hills so as to regulate water supply and prevent erosion of land. Briefly, they would permit farmers and land owners to place their properties under the control of the State Forestry Department, and when the timber is ready to cut to make application and pay 10 percent of the proceeds to the county for distribution to the townships in return for the low rate of taxation during the period of growth. Where it would hit the townships would be during growth, when taxation is limited to $1 per acre.

Work Horse Bill.—The house will be called upon to act within a few days on the bill to limit the working of all horses and mules to 12 hours a day. This measure may be changed so as to apply only to cities.—Hamilton, Harrisburg, April 14.

NEW JERSEY FARM NEWS

New Summer School.—Governor Fielder has signed the bill establishing summer schools for agriculture, manual training, household economics, etc. It provides that summer schools shall be established and maintained for the training of persons in such subjects as the state board of examiners shall prescribe.

Vocational Education.—Assembly Bill No. 462 is also a law. It establishes vocational education, which is defined to mean education to fit for profitable employment. The board of education of any school district may establish such schools, or two districts may unite in establishing them.

Some Other New Laws.—Amending the road act and removing the limit of $500,000 that may be appropriated each year for road improvement; permitting taxpayers to pay taxes in partial payments, no payment to be less than $20; amending the road act of 1912 by giving state commissioner of public roads authority to take charge of construction and maintenance of state highways.

Trolley Freight Defeated. — Senator Gaunt's bill to permit trolley companies to carry freight, under regulations by the public utility commission, without concurrence by municipal authorities, was defeated.

Increase State Roads.—State Road Commissioner Stevens will, next year, ask for legislation permitting the extension of state highway system to include 1,800 miles of roads, instead of 1,500, as now authorized. The additional 300 miles will enable the department to take care of some sections not fully provided for in the tentative plans already adopted.

State College Appropriations.—The state appropriations for the state agricultural college will be $85,000 less than last year. An appropriation of $100,000 was made last year for a new agricultural building, and only funds to equip the structure were included this year. Other appropriations are: State college, $30,000; short course college, $20,000; ceramics, $5,900; equipment of new agricultural building, $20,000; departments of biology and bacteriology, $7,500; books and periodicals, $2,000; summer school work, $6,000; repairs and improvements on the college farm buildings and grounds, $5,000. The feature appropriation is that which provides for the summer school.

Dairy Inspection.—Of 415 dairies inspected by the division of creameries and dairies of the state board of health last month, milk production was stopped in eight. Like action was also taken against six dairies in Bucks County, Pa. Those found below 60 percent of the perfect mark numbered 155 and those above, 216.

Boys' Agricultural Contests.—A special contest in garden vegetables for boys living in villages has been added to the corn or potato contests. This will be open to all boys not over 18 years of age. Competition is offered as follows: Lot No. 1, best exhibit of 3 vegetables; Lot. No. 2, best exhibit of 6 vegetables, in all cases showing 3 samples of each kind. A particular part of this contest will be the prize essay by the boys on "How I grew my vegetables and the lessons I learned from my work.—D. T. H.

NEW YORK STATE NEWS

Oleo Dealers Fined.—Last winter two men, O'Neill and Upritchard, were arrested for manufacturing and selling oleo as butter at Latham's Corners, N. Y. On April 9 they pleaded guilty in the United States district court at Syracuse and were fined $500 and $1,000, respectively. Then the judge proceeded to remit $400 of O'Neill's fine and $800 of Upritchard's. Some of the ways of the law are beyond comprehension.

Adulterated Vinegar.—The department of agriculture has sent out a warning to vinegar dealers against adulteration. Agents have discovered a large quantity of adulterated article in the hands of dealers, and in many instances this vinegar is believed to contain wood acid.

Commission Merchants' Bill.—The assembly this week passed the commission merchants' bill, which has been described in this paper fully. The governor is expected to sign it. The commission men, those who do business above board, are signifying their pleasure at the passage of the bill, as it will put out of business the unscrupulous dealers who have been doing business heretofore.

New Veterinary Bill.—The law in reference to the contagious diseases of animals is to be amended in several important particulars. The chief of the bureau of veterinary service is to receive a salary of not more than $4,000 a year, and is to act under direction and authority of commissioner of agriculture. An authorized veterinarian of the department must examine all animals supposed to have contagious or infectious disease before they are killed, and health officers are required to notify the department of any such diseases in their districts. All infected animals supposed to be suffering from these diseases must be quarantined. The commissioner has authority to cause a physical examination of all dairy cows in the state whose milk is marketed in liquid form or made into butter, cheese or other food. Application may be made by owners of dairy cows for examination by the tuberculin test. The appraisal value of animals condemned by the state shall be the market value of the animal at time of appraisal, but shall not exceed $120 for registered purebred stock, or $75 for others; for equine animals the appraisal value shall not exceed $120.

Prison Labor Recommended.—The State Commission on Prisons recommends the working of prisoners on the highways of the state with superintendents of prisons given discretionary power to pay prisoners within certain limits. The report asserts that the prisoners should be made self-supporting. The sale of prison-made goods last year amounted to $885,963, which is an increase of $59,000 over the amount received the preceding year.

Minor News Matters.—There have been nearly 4,000 bills introduced in the legislature this year and only 220 have become laws at this writing. Only one has been vetoed. The Stillwell alleged bribery case has occupied the attention of the senate judiciary committee all the week. Legislation has therefore lagged to a considerable degree. Governor Sulzer has again asserted that no guilty man shall escape when he is thru with the several investigations of the state department. The recent quite cold snap did no damage to fruit buds in eastern New York, and according to reports from the department of agriculture no damage was done anywhere in the state. The buds were not sufficiently advanced.—New Yorker.

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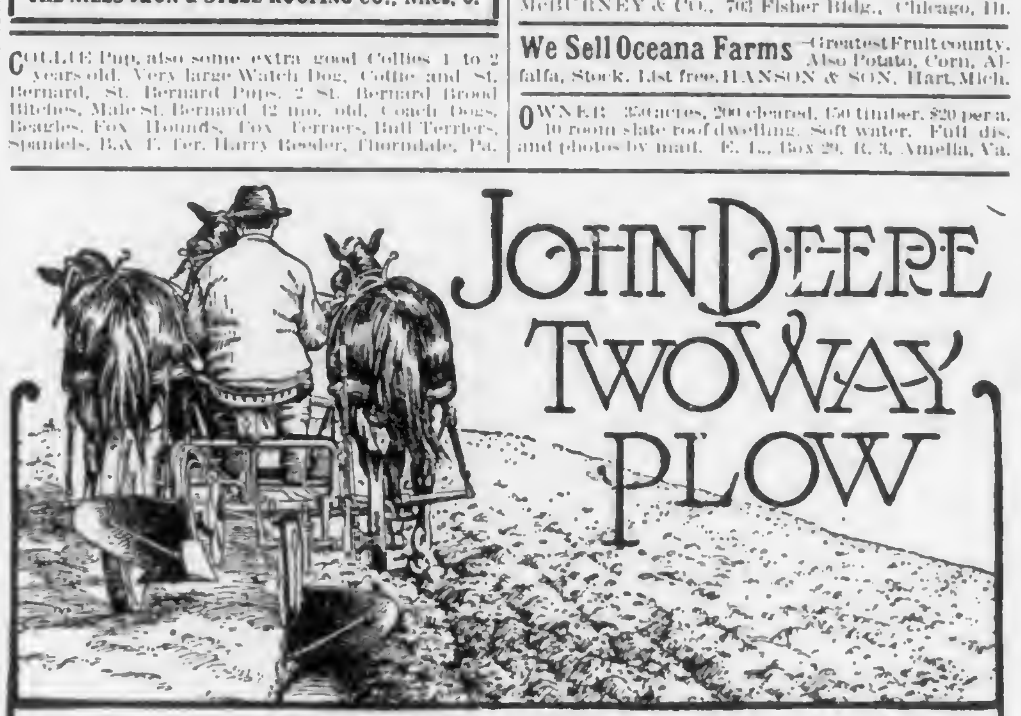

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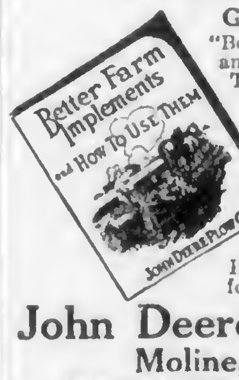

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The Daughter of David Kerr

By HARRY KING TOOTLE.

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PRECEDING CHAPTERS

The city of Belmont is a typical middle-western village, under the rule of the political “boss,” David Kerr. The daughter, Gloria, had spent her childhood away from home and knew nothing of her father's profession or business affairs. Supposing him to be a wealthy real estate merchant and a leader in Belmont society, she came home to take her place in the best circles of the town. To gratify her wish and continue the deception, David Kerr secretly secures the services of Judge Gilbert to introduce and assist Gloria in establishing herself in society. In return, Kerr is to give the full weight of his political influence to secure the passage of a questionable street railway franchise, the money coming from such influence going to Gilbert. The greatest menace to the success of the franchise effort is the attitude of young Joe Wright, recent purchaser and editor of the Belmont News, a reform newspaper. To further complicate matters, Mr. Wright is found to be an ardent admirer of Gloria, they having met in foreign travels.

CHAPTER V

There was so much to be said that Wright and the girl were at a loss to know where to begin now that they had an opportunity to talk without interruption. With Gloria there was an undercurrent of unrest caused by the fact that she feared he had carelessly broken the promise made on the Rhine to meet her again in Paris. She had waited and he had not come.

Wright was no less interested in what they were about to say. In the first place, after a long absence, he was again with the girl whom he had made it a point to meet at various places in Europe. To add confusion to their friendship, which he had highly prized, had just come the astounding revelation that she was David Kerr's daughter. How could he be a friend of the daughter and an enemy of the father? Then, too, what did she know of her father's methods, and of his own attitude toward the boss of Belmont? And if she knew, what did she think? These things made conversation rather an exhausting mental exercise.

“Well?” Gloria smiled, inviting him to begin the story of all that had happened since they had shaken hands and parted, he to go to London and she back to Paris where she was to see him later but where disappointment awaited her.

“Well,” he answered. He wanted her to begin, and thus give him the clue to her line of thought.

“This isn't much like Paris.”

“You're here.”

“Yes,” she laughed, “and you're here, too. That's why it isn't like Paris when I saw it last.”

“At any rate, I'm glad we're both here.” He was anxious to have her interpret the present.

“For me it is the first time in twelve years.”

This was a glad surprise to Wright. Then she can not know much, he thought. Her remarks emboldened him to say:

“Didn't you tell me your father was a real estate operator?”

“Yes. Didn't you know that?”

“I had almost forgotten. You see I am practically a stranger here. You and I are alike in that respect, if you have not been here for a dozen years.”

“Oh, I wouldn't say that,” she replied quickly. “My father knows everybody and everybody knows father. I shall know everyone in a week.”

“Yes, that's true,” he said cautiously.

“How long have you been in Belmont?” asked Gloria, seeking to satisfy her own curiosity now that she had told him something about herself.

“Only a month or so.”

“I think it's the queerest thing in the world that we should meet here of all places. What are you doing here?”

And then Wright lied. He did not have time to consider what might be the ethics of the case. He listened to his heart, which may have made him a traitor to himself, and answered promptly:

“I've been doing some magazine writing and an occasional bit of newspaper and similar work.”

Had he been asked he could not have explained why he had not replied just as promptly that he was the owner of the Belmont News. What the real reason was he could not even explain to himself. Earlier in the evening he had talked glibly of a newspaper and its duty, and here an hour later he was denying his own under the fire of a pair of laughing eyes.

Gloria, whose ideas of business were as vague as her notions of politics or esoteric Buddhism, accepted his explanation as adequate; especially since she recalled that when in Europe he had been writing some magazine articles about the tariff. Since she never thought about the matter at all she never thought it strange that Belmont should be the place for such labors.

“Have you ever been to Locust Lawn?” was her next question.

“I have the pleasure in store for me.”

This pleased her. Even before he came there were many little things she could do to make the house appear to better advantage. Altho he had not yet made explanation of his failure to come to Paris, she found herself anxious to have him once more on the old footing of intimate friendship.

“Are you the same as in the mad old, glad old Paris days?” he asked.

She parried the question with another.

“Are you?”

“In some respects—only more so.”

“That's a riddle. I hate riddles.” As he made no reply to this, she went on after the pause of which he had not taken advantage. “I hope we meet accidently as often as you met our party aboard.”

“Was it accident?” he made bold to ask.

“Wasn't it? You pretended it was.” Then the mischievous little sprite that ruled her tongue forced her to say, “I don't blame you; I think Annabel Hitchcock is a beautiful girl. We all know you were crazy about her.”

“Was I?” Rising inflection.

“Weren't you?” Also rising inflection.

“I'll admit I followed your party,” he conceded.

“Now we're getting at the truth of the matter,” she replied triumphantly. She felt she was teasing him, and she enjoyed it. “But why didn't you come on to Paris, as you promised us? I'd like to know why we suddenly lost you. Was it another girl even prettier than Annabel?”

He did not join her when she laughed at the picture she had painted. All the light joyousness, the first which had been his since he had come to Belmont, died out of his face as he answered:

“After the Rhine I had hoped to meet you in Paris again. I looked forward to it as the beginning of another happy time. And then, in London, I received a cable—my mother was dying.”

“No,” protested the girl, her eyes wide with pity.

“I had just time to catch the express for Liverpool that would put me aboard a liner an hour before she sailed. Miss Kerr, I know I thought of Paris, but things all seemed blurred to me, and so the message I had planned to you—not to Miss Hitchcock—was never sent.”

“My poor friend.”

“I reached America too late.”

“I'm so sorry,” she sighed.

He had told the whole story. There was nothing more to say.

Both sat gazing into the fire, busy with the thoughts of life and death. At last Gloria said quietly, with no more movement than if her thoughts had of themselves become vocal:

“Tell me of your mother. I never knew my mother, and so I envy you. You loved her?”

“I loved her,” he began. Of his own affairs he seldom spoke, yet here was one who by her very presence made him glad to tell his story, and glad that it was a story he could tell with pride. “Son never loved mother more. And never did a son owe a mother more than I owed mine. I never knew my father. He was a good man, but not provident. When he died, mother found she had to support herself and me, an only child O Miss Kerr, if you knew the bitterness of that struggle as I know it your heart would ache, too, at thought of it.”

He paused, but something clutched at Gloria's throat. She could not speak.

“If mother could have a fault, it was her pride in me. I suppose when all the things she had planned for herself came to naught at my father's death she centered everything on me. It wasn't right, of course, because I wasn't worth it, but I tried, always tried to be worthy of that pride. And when she came to die—she wrote——”

He could not go on, and Gloria, respecting his grief, was silent, too.

“I'm so glad she lived to see it all come true,” Gloria said finally in a low tone. “It makes me think of what sacrifices my father has made for me. Just because he loved me and wanted me to have everything, he has given up what joy I might have been to him. Your story has taught me what I owe to him.”

At this a sudden pain shot thru the man's heart. It made him pledge himself before Heaven to protect her from the truth.

“My mother died when I was a baby, just as your father did,” she explained wistfully. “And, as I told you, I envy you your mother. I wish you had written me. I could have at least sent my sympathy.”

Now Gloria understood. All that year her thoughts had presented him other than in the true light.

“I wrote to you,” he said gravely, “as soon as I wrote to anyone. I didn't know your address, and ventured letters at Brown, Shipley's in London, and the American Express Company in Paris. I had heard you speak of both places, I thought. Both letters came back.”

“Give them to me. I want to keep them. We left Paris before you wrote, and hurried to Japan. Our mail was sent in care of Cook's. What did you do—afterward?”

“I took a long rest. There was not a relative to share my sorrow with me. Now that I've come down out of the mountains and taken stock of life I find I haven't a soul in the world——”

“Don't say that, Joe.” She felt irresistably drawn to him and put forth her hand and laid it on his sympathetically. He turned his own and let hers nestle within it.

“You're still the same Gloria.”

“A year isn't so long a time.”

And so they sat, with never a word to say, just that hand clasp of silent sympathy as they gazed into the fire.

CHAPTER VI

In the drawing-room, Kerr and Gilbert were just beginning a conversation which had for its theme the new turn affairs had taken, when Dr. Hayes passed thru the hall on his way out with his wife. Sam Hayes was a member of the ring's inner shrine, and when the opportunity arose for what was termed a quick clean-up he was always a member of the syndicate. Therefore, the die having been cast, the judge called him in and announced the determination to push the franchise, a deal with which the coroner was already familiar. Far more than for any other reason Kerr was always willing to include him because his Belmont connections were so strong that he really lent an air of respectability to any undertaking.

“We are going to put a line to the stock yards down Maple Avenue, Sam,” began the attorney.

“So it's settled, is it?”

“Yes. You remember that vacant track beyond Benton Park? The one that the Belden Brothers are thinking of cutting up for a residence addition. Well, you can't build a house in a mile of it when the road's thru there, but it'll be worth a great deal more for factory sites.”

“You'll have railroad connections, see?” explained Kerr.

“What's doing?” asked Sam, always keen for a dollar.

“Get an option on it,” continued Gilbert, “and we'll cash in big.”

“How long an option?”

The attorney looked at Kerr.

“Sixty days,” said the latter.

“In that time we can ram the franchise thru the council, and when that's done any bank'll lend us the money to take over the property.”

Hayes went out to rejoin his wife, after promising to take the matter up in the morning.

Gilbert was just on the point of beginning a discussion of Gloria's future when a reporter from the Banner was announced.

“I'll come out to see him,” said the lawyer, rising.

“No,” objected Kerr, “have him in. I want to see him, too.”

So Mr. James Winthrow, the young political reporter for the Banner, was admitted.

Winthrow, like the usual run of star reporters in a town the size of Belmont, was not only a shrewd young American, but he was also well aware of his great shrewdness. He had made as many political prognostications as any young man in the country, and they were quite as misleading in the main as were any of the others. Being on the machine paper and a loyal reporter, it followed as of course that he was a loyal machine man. Old Jerry Winthrow, the editor, was a distant relative, but friendly enough and interested enough in the youth to explain to him some of the turnings of the political wheels.

When Winthrow saw Kerr closeted with his legal adviser he could not suppress a whistle of surprise.

“Evening, Judge. Good evening, Mr. Kerr.”

“How are you, Jim?” said Gilbert.

The boss merely nodded an acknowledgment of the greeting. “What can I do for you?”

“Some stock yard terminal rumors in the air, Judge; just rumors, but I can't find out a thing.”

“I haven't heard a thing about it,” the lawyer assured him. Then to Kerr, “Have you?”

“Not a word,” answered the boss.

“Where did you get it?” queried Gilbert.

“Floating 'round town. I met Mr. Kendall just now going to the station, but he wouldn't talk. I know that the surveyors have been out. When Mr. Kendall said he'd been here to dinner, Bilby, he's our city editor, told me to see you.”

Gilbert turned to Kerr. The leader was a man of few words. He disposed of the matter under discussion with one sentence.

“Tell Bilby, Dave Kerr said not to print a line; he'll understand.”

That was all. It was an order, and the reporter accepted it as such. Things in Belmont were so well regulated that there was no danger from any source which would cause Kerr to think twice before sending his order to the city editor of the Banner by the reporter of that paper.

As Winthrow rose to depart, Kerr said, “You have anything to do with the society columns?”

“Occasionally stumble on a story.”

“Tomorrow put in that Miss Gloria Kerr has returned from a trip around the world.”

Winthrow put it down, and then asked with pencil poised, “Is she at Locust Lawn?”

“Yes,” said Kerr.

“Don't write the item until I telephone you later in the evening,” interrupted Gilbert. He had been plotting and planning along social lines ever since Kerr had told him of Gloria's return. Several things he had already thought of flashed thru his mind. The impossibility of Locust Lawn as a social center was one of these, and Gilbert had something to suggest before having the Banner write the story which would herald her return. “You could add this, tho. Say that Judge and Mrs. Gilbert will issue invitations next week for a dance to introduce Miss Kerr.”

No sooner had the reporter gone than Kerr turned to Gilbert and said with what was for him unaccustomed warmth:

“That's mighty good of you, Amos.”

“Not at all.” Then the lawyer went on in an injured tone, “I'm only sorry that you put the franchise up to me as a bribe. I'm not doing it for that.”

“I knew you'd do it for the girl's sake, but I want you to get what you can out of it, Amos. I owe you that much.”

Gilbert was glad that his wife entered at this minute, for a discussion of Gloria's social future probably would not bring out all sides to the question without a woman being a party to the conversation.

“I just have to talk to someone,” Mrs. Gilbert confessed immediately, “and I didn't have the heart to go into the library. I peeped in just now and they were sitting in front of the fire laughing and talking and appearing to be having the best time in the world. I don't know why, but it made me think of the times when you used to come to see me, Amos.”

Husband and wife smiled at each other, and he said:

“You were a beautiful girl, Julia.”

“I'll tell you what,” Mrs. Gilbert went on, conscious of the compliment but not desirous of herself making a comparison. “Gloria is a beautiful girl, and what is more, I can see that she has a beautiful character. I'm so sorry she has been away so long.”

“What could I do, ma'am?” asked Kerr. “I couldn't take care of her at Locust Lawn.”

Locust Lawn had been in Gilbert's mind all the time, and he had waited only to sound his wife before speaking. Her enthusiasm was such, as evidenced in what she had just said, that he thought now was the proper time to broach the subject.

“There's only one thing to do, Mr. Kerr,” he said. “Gloria must come in and stay with us. Locust Lawn is all right as a home for you, but as it stands it is no place for a young lady in society; especially, since you want me to be plain spoken, no place for a young lady who has had such advantages as your daughter.”

“Exactly, exactly,” assented Kerr. He had seen that, and it had been one of the thorns in his flesh all day.

Mrs. Gilbert was quick to see that it was the only thing to be done. She had become as much interested in Gloria as had her husband, and now she added her own invitation to his.

“The Judge has expressed my own ideas exactly,” she said. “Mr. Kerr, you must let her come to us. We have fallen in love with her already.”

“Have you, ma'am?” Kerr asked. “Then I'm awfully glad.”

“Make the invitation for a month,” Gilbert directed, “and then we can ask her to stay on.”

“I'll do nothing of the kind,” said his wife airily, as she started on what was to her a pleasant errand; “I'll ask her for the rest of her natural life, and if she wants to stay that long she's welcome.”

(To be continued.)

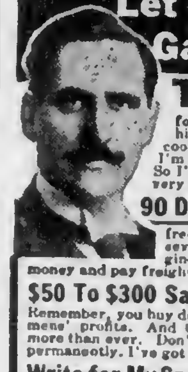
Employer: “There's a man named Robinson at the foot of the High street owes us five pounds. You will call and collect the money.” Collector: “But there are about a dozen Robinsons in that part of the town. Which one is it?” Employer: “I'm really not sure, but you'll know our Robinson at once by the fact that he kicks you out.”—Pearson's Weekly.

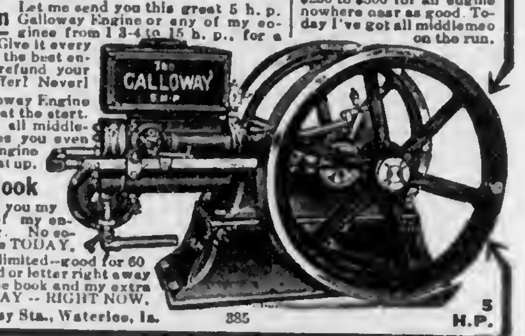
The youth who was smoking a cigarette near the monkey's cage took another one from his pocket. “Would it do any harm,” he asked, “if I should offer him one of them?” “Not a bit,” responded the attendant. “He wouldn't touch it. A monkey isn't half as big a fool as it looks.”—Chicago Tribune.

Desk Sergeant: “Are you married?” Prisoner: “No, sir.” Officer: “Beggin' yer pardon, Sarge, he's a liar. When we searched him, we found in his pockets a clipped recipe for curin' croup, a sample of silk, an' two unposted letters in a woman's handwritin' a week old.”

On a recent Monday morning the pastor of a church in Virginia was the recipient of a basket of strawberries brought to him by a little girl of the parish. “Thank you very much, my dear,” said the minister. “These berries are as fine as any I've ever seen. I hope, however, that you did not gather them yesterday—the Sabbath” “No, sir,” replied the child. “I pulled 'em early this mornin', but they was a-growin' all day yesterday.”—Harper's Weekly.

A little fellow of four years of age went to a blacksmith's to see his father's horse shod, and was watching closely the work of shoeing. The blacksmith began to pare the horse's hoofs, and thinking this was wrong, the little boy said, earnestly, “My pa don't want his horse made any smaller.”





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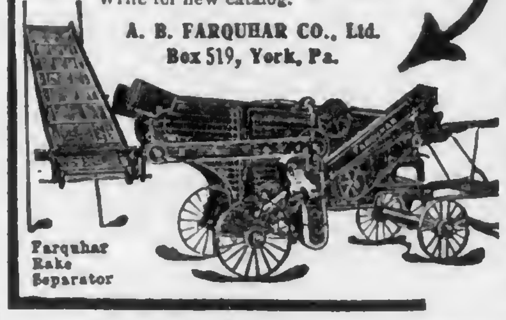

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Household

THE GARDEN AND THE TABLE

Supplying Spring Vegetables

The eating problem is much more difficult to solve in the spring than at any other time of the year. The supply of fruit and vegetables is liable to be limited, and what there is left is not quite as fresh and palatable as it has been, and with the warm days in spring we do not need, or care for, as heavy a diet as during the cold days of winter.

Salsify.—I will mention a few of the ways in which I try to solve the problem. Last summer in my garden I raised a supply of salsify, or vegetable oyster, and of parsnips. A few of these were stored in the cellar in dirt, but most of them were left in the ground for use in the spring. We also have a long row of rhubarb, and a bed of asparagus, both of which are ready for use early in the spring.

The salsify roots are washed, scraped, thrown in water to prevent discoloration, then sliced crosswise in thin slices, put on the stove in hot water and cooked until tender and nearly dry. If a small piece of codfish is scalded and then added, it makes them taste very much like the genuine oysters. Season with butter, salt and pepper. Milk may be added, making an excellent soup, or they can be served as vegetables, by the addition of cream or white sauce.

Parsnips.—The parsnips are prepared in nearly the same way as the salsify. Sometimes after cooking they are put in the spider and fried, either with or without being dipped in egg, or a batter poured on them. I like to invent different ways of serving vegetables, and to try different ways I read of others trying.

Salsify and parsnips belong to the slow germinating class of vegetables, and should be sown as early in spring as the ground can be worked, for they need the cool, moist days of spring in which to germinate. They grow best in light, rich mellow soil, and should be given frequent cultivation and thinned in the rows so the roots may have a chance to develop and be of good shape.

Rhubarb.—Rhubarb is one of the earliest vegetables which we look forward to in the spring. It will start to grow almost as soon as the frost is out of the ground, and it has an acid which is very beneficial, and seems to be just what we need. As soon as the stalks are large enough I pull off the outside ones, taking care not to disturb the inside stalks. If you want to keep your rhubarb growing good all summer, so you can use it at any time, keep the outside stalks either cut or pulled off, so not to rob the roots of unnecessary strength. The stalks are cut in short lengths, skin and all, washed, put in a granite dish in enough hot water to nearly cover them, and sugar enough to make as sweet as desired. It is then put on the back part of the stove and slowly cooked until tender. This rich-colored juicy rhubarb sauce, so thin that you can eat a large dish of it, will tempt most anyone's appetite.

There are so many ways to prepare rhubarb that one can have it very often and not tire of it. It can be used in about all the ways in which apples are used—in pies with two crusts, or with one crust, and frosting can be placed on top after baking and placed in the oven to lightly brown, or it can be made something like a custard pie, but perhaps a little sweeter, adding one good cup of rhubarb cut in small pieces when ready for the oven, and a small piece of butter.

Rhubarb cooked the same as for sauce, but with less water added, or perhaps put in the oven after preparing, in a covered dish and baked, which makes it richer, makes a very nice sauce to use as you would apple sauce in making what is called "farmers' apple pie," which is made like a strawberry shortcake, except that the sauce is used in place of berries.

Another good way is to cut the rhubarb in small pieces, after washing in a granite basin, add a few raisins, sugar and a little water. Stir up a rich biscuit dough and spread over it, and put in the oven until the biscuit is done, or if one is in a hurry and wishes to, slices of stale bread can be used in place of the dough, and the dish covered and put on the stove. The bread will be steamed thru by the time the rhubarb is cooked. Rhubarb should not be skinned. The skin will cook tender and the rhubarb will be richer and of better color.

A very cooling and satisfying drink may be made with rhubarb to take the place of lemonade occasionally on hot days. Prepare it as for sauce, then crush it and pour cold water on it, let it stand a while until the juice has soaked out of the rhubarb; then pour in tumblers and sweeten if desired.

Asparagus.—Everyone who has land enough should have a good bed of asparagus. It costs but little to start one, and when one is well established it will last for years with but little work. By purchasing roots instead of seeds, about two years' time will be saved. The land needs to be quite rich, and a good dressing of manure should be applied every fall, and in the spring be well worked into the soil.

When the asparagus is a few inches high you can begin to cut it for use. It can be cut every few days until about the first of June. Cut off just below the surface of the ground with a sharp knife, wash, cut in short lengths, and cook in just enough boiling salted water to cover. Cook until tender, season as you would peas with pepper, butter and cream, and you have a very appetizing and desirable dish. Asparagus can also be cooked in various other ways. It is excellent served on toast.

If you have but few different kinds of fruit or vegetables, you can still have quite a change of diet by preparing them in different ways on different days. Potatoes, eggs and apples are staple articles of diet, but there are myriad ways in which they can be served. Do not have boiled potatoes, fried eggs and apple sauce every day until every one is tired of them. A change tempts the appetite and is usually not much more work, if any.

Salads.—Salads are a great help in solving the eating problem. Most people like them, and you can often utilize the left-overs, even using rice and other cereals in this way. You can make any desired combination, provided it is palatable, and add hard-boiled eggs and salad dressing. If you have no salad dressing on hand, try using salt, pepper, vinegar and cream, which I have found an excellent substitute. It is especially good on onion and apple salad, which is made by chopping or cutting in small pieces onions and apples, equal parts of each. I add the cream after mixing the rest.

One of the best spring salads is made by getting the young tender leaves of the dandelion as soon as you can find them, washing them thoroly, cutting up finely with a sharp knife or the shears, and adding hard-boiled eggs, sliced, pepper, salt, vinegar and cream, or if preferred, salad dressing. Later will come the young onions, lettuce, cress, etc., all of which help to solve the eating problem. If you do not have the vegetables for use this spring, remember that now is the time to prepare for such supplies for next year.—Mary Wheat Jenkins.

KEEPING MEALS HOT

By Hilda Richmond

One of the most vexatious things any housekeeper is called upon to do is to wait meals, but sometimes it can not be avoided on the farm. If it is known beforehand that the meal must be delayed, it is possible to prepare for the emergency by selecting foods and ways of cooking that will keep hot and good a long time. But when the meal is delayed without notice, it is harder to manage. Almost every range nowadays has a warming oven that will keep a meal comparatively fresh and good for 10 to 20 minutes, but beyond that time nothing much can be expected.

When the man of the house announces, "We may be a little late to dinner today," the wise mistress of the house knows that is the day to get up a dinner that will keep well. A boiled dinner of kraut and bone meat, a combination of corned beef and cabbage, a piece of boiling beef with vegetables, a kettle of vegetable soup, a piece of boiled pork with turnips and carrots, a stew or any of the boiled dinners that men need can be prepared and served any time from eleven to one o'clock without much trouble, or without loss of flavor. Then there are such vegetables as baked squash that will last an hour or two past dinner time, tomatoes, escalloped corn, baked, beans, slaw, potato salad, stewed onions and other good things. It is all in the planning, for dinner can be served early or late to suit the convenience of the men if only the right dishes be selected.

Or baked things can be used, and a roast of beef prepared with a slow fire, or a piece of pork slowly cooked with beans and potatoes. A piece of roast pork with browned potatoes can be served at twelve, or it can wait several hours, without losing its good taste.

About the best way to manage dishes that need to be eaten at once to be in their prime when dinner is delayed is to set them off to cool and then warm them over. Fried ham becomes tasteless and hard when dried out in the oven by waiting, but warmed over ham is a different thing. Mashed potatoes are ruined by waiting, but by making them over into potato cakes they will eke out the fried meat nicely. Biscuits can be dipped in cold water a second and heated a second time in the oven better than to try to keep them warm by wrapping up and keeping in a warm place till the men return. Stewed vegetables take kindly to warming over and such things as desserts dry up if they remain too long in the oven and so should be cooled and then reheated if the wait is to be long.

And when the dinner is delayed, it is always well for the women and children to sit down and have their feed on time. Making the whole family wait because one or two members are delayed is poor policy. It is better to get a whole new meal for the late comers than to try to make the whole family contented with empty stomachs until all can be present. It is vexatious to the men to have delayed meals and doubly vexatious to the housekeeper, but it isn't necessary to make the whole family unhappy on that account.

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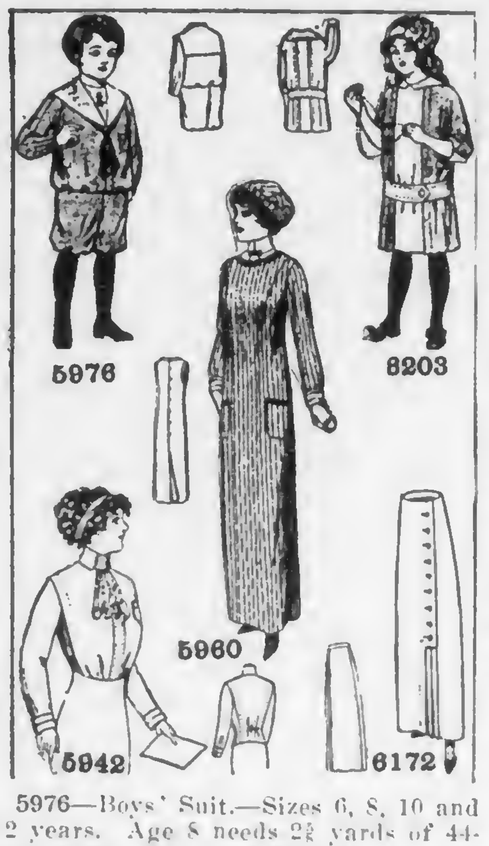

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COUNTY NOTES

Chester Co., Pa. (S. E.), March 31.—Weather typical in March; alternately warm and cold. Butter is steady if not higher in places, while milk comes down. Hay is $15 for best; eggs, 15c. Cows are scarce and high. Horses are high. Potatoes, 75c. Farm work is well up. Farmers are plowing, hauling manure, spraying fruit trees and sowing clover seed. Conditions are good.—Hayes C. Taylor.

Perry Co., Pa. (C.), March 31.—Weather mild with an excess of rain. Live stock looks good. Winter wheat is in excellent condition. Farm stock is very high and scarce. Public sales are over. Horses sold for $150 to $300 for heavy draft; cows, $45 to $90; hogs, $5 to $10 pair; wheat, $1; corn, 70c; oats, 50c; potatoes, 50c; butter, 32c; eggs, 15c doz.; chickens, 12c lb. Work is well on; farmers are waiting for settled weather.—S. B. Swartz.

Venango Co., Pa. (N. W.), March 31.—First part of March was cold and stormy; middle part pleasant; last part wet and unpleasant. Live stock in excellent condition. Horses high in price and scarce. Crops looking fine. Pork, 10c; butter, 35c; eggs, 25c; potatoes, 70c; apples, 80c; hay, $16 ton; straw, $9 ton. Farm work well along. Some spring plowing done. Manure almost all hauled and spread. General conditions good. Roads very bad.—W. J. Pringle.

Steuben Co., N. Y. (S. W.), Mar. 29.—Much rain and high water of late. Live stock looks good. Not many beef cattle for sale. Cows sell high at auctions, of which there are many. Butter, 34c; eggs, 17c. Potatoes moving freely at 45c. Very little done on the farm yet; ground is very wet; frost just gone out.—G. W. Rowley.

Montgomery Co., N. Y. (E. C.), Mar. 27.—Heavy rains and washouts; roads damaged. Stock has wintered fine and sells high. No crops being moved on account of bad roads. Maple sugar less than half yield. Syrup, $1.25 gal. Some plowing being done. Many farmers attended good roads meeting at Fonda.—John L. England.

Lawrence Co., Pa. (W. C.), Mar. 26.—Rainy; large floods doing much damage. Stock doing well. Grass and wheat doing well. Prices good. Horses from $100 to $325; milk cows from $50 to $100; pork, $11 cwt.; hay, $15; potatoes, 65c; apples, 90c@$1. Some plowing done last week; farmers watching it rain this week. Farm help scarce.—J. A. Boak.

Wayne Co., Pa. (N. E.), Mar. 25.—Warm, with frequent showers. All stock in fine condition. Milk and pure-bred stock only source of income. Hay, $14 ton. Straw, $10 ton; butter, 40c. All kinds of meat very high. No farm work done yet, but looking forward to an early spring. Land stony but in good state of fertility.—E. W. Carl.

Crawford Co., Pa. (N. W.), Mar. 24.—Lots of rain and warm weather. Roads are quite good. Public sales plenty. Cows, $50@80; horses high; hay, $7 in barn; potatoes, 50c; oats, 40c; corn, 33@35c; apples, 40@50c; hens, 14c per lb., live; eggs, 18c; butter, 32c. Maple syrup season poor, sap not sweet; buds are starting. Wheat is looking fine. A number of farms have changed hands. A number are yet unrented; some will lay idle. Here is a good chance for some young, energetic farmers. Cutting wood, hauling manure, fixing fences, etc.—J. F. Seavy.

Luzerne Co., Pa. (E. C.), April 1.—Weather very windy and stormy. Live stock scarce. Winter grain looking good. Corn, 80c; wheat, $1; rye, 75c; oats, 50c; potatoes, 55c; timothy and clover hay, $18 ton. Farm work advancing slowly on account of unsettled weather. A large amount of spraying been done.—N. C. Brown.

Chautauqua Co., N. Y. (S. W.), April 7.—Cool and stormy. Cows, $50; horses, $175 to $250 each; hogs, 10½c, dressed; poultry, live, 15c; dressed, 23c; oats, 48c; wheat, $1.10; cornmeal, $1.20; feed, $1.25; hay, $15; straw, $10; corn fodder, $8 ton; small pigs, $5. Work well along; some plowing done. Early gardens started, and many are tieing their grape vines between showers.—J. L. Barber.

Lancaster Co., Pa. (S. E.), April 5.—Fair and cool at present. Have had plenty of rain. Live stock has wintered well. Cattle of all kinds sell high. Fat hogs bring 10@11c. Majority of the crops have been marketed, with exception of some hay and tobacco. Wheat is well on for the season. Young grass looks good. Some clover seed and some tobacco seed have been sown. Farmers are hauling manure and fertilizer. Quite a good bit of plowing has been done.—J. Henry Haverstick.

Warren Co., N. J. (N. W.), April 4.—Rainy. Veals, 10c, live; cows, $50@80; eggs, 18c; butter, 36c. Grain looks good; also grass. Milk, $1.65 cwt. Not much plowing done; ground too wet.—V. R. Loller.

Northumberland Co., Pa. (C.), April 6.—Weather very changeable; past week quite dry. Live stock scarce and high. At public sales cows were sold as high as $100; horses, $150 to $275. Winter grain in excellent shape and growing fine. Butter is worth 30c; eggs, 16c; potatoes, 55@60c; wheat, 98c; corn, 60c, and scarce. Spring work is well under way. Manure all out and everybody plowing. Help is scarce. A few farms vacant.—George A. Hockley.

York County, Pa. (S. E.), April 2.—Weather normal with considerable rain and very high winds. Fat cattle scarce and high at 7c to 8½c; fresh cows selling at $70 to $700; mules, $400 to $550 per pair; horses, $150 to $225; wheat, $1.02 bu.; corn, 56c bu.; potatoes, 65c bu.; apples, $3.50 bbl.; clover seed, $12 to $13 bu.; eggs, 17c doz.; butter, 34@38c lb. Farmers busy hauling manure, plowing sod and sowing their oats. Spraying fruit trees about all done.—Clarence D. Emig.

Camden Co., N. J. (S. W.), April 3.—Weather fine with an occasional shower. Stock is looking good. Winter grain is looking fine, 6 to 8 inches high, rank and healthy. Farmers are sowing their clover seed, worth $12.50 per bu.; alsike, $14.75. Stock prices are about the same as for the past few months. Eggs, 20c doz.; potatoes, 40c basket. Some of the farmers are leaving their cabbage in the ground, as the price will not pay for digging and hauling to market. Some of the farmers are planting potatoes. Seed potatoes, $2.25 to $2.50 per sack.—Wesley R. Stafford.

Delaware Co., Pa. (S. E.), April 3.—Weather moderate; has been very changeable. All stock very high. Horses bring even better prices than last year. Eggs, 16c; veal, 10½c, alive; chickens, scarce and high. No demand for hay. Plowing started. Some gardening being done. Peaches have been badly frosted in this section.—Charles W. Ambler.

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(Conducted by W. C. Fair, V. S.)

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Inflamed Tendons.—Whenever I drive my horse much on road his legs swell and inflame, his tendons seem to thicken and are tender when pressed. I need him to use and would like to know what will take this heat out of his legs. L. L. T., Russell Hill, Pa.—Dissolve ¼ lb. sugar of lead in one gallon cold water and apply to inflamed legs, 3 times daily. Give him a teaspoonful powdered nitrate potash at a dose in feed, 3 times a day until his legs cool, then give medicine less frequently, just as often as you believe it is necessary. It is perhaps needless for me to say that the bowels should be kept open. This will be done most easily by feeding him well-salted bran mashes and roots. He should be exercised some every day.

Shoulder Sprain.—I have a mule that has been lame for the past three weeks. When walking he drags fore toe on ground and seems to have trouble in raising toe up off ground. I am inclined to believe he hurt shoulder when rolling. S. C. R., Walnut, Pa.—I believe your mule wrenched shoulder, for dragging toe indicates shoulder lameness. He will be benefited by rest. Also apply 1 part turpentine, 1 part aqua ammonia and 2 parts soap liniment to shoulder, twice a day. As soon as he begins to show less lameness, it will not be necessary to apply liniment, except once daily. For fear his ailment may be of a rheumatic nature, give him 1 dr. sodium salicylate at a dose in feed, 3 times a day. If he is not rheumatic, this medicine will do him no harm.

Peculiarity in Gait.—I recently purchased a six-year-old horse that is either lame in left hind leg, or he has what the owner said was a hitch in gait. These horse traders are so full of excuses that I have felt he might have sold me a lame horse. The horse stands perfectly sound on all four legs when in stable, but as soon as he is trotted he shows a hitch with left hind leg. A. J. K., New Castle, Pa.—I have owned many such horses that were perfectly sound. This peculiarity of gait is often brought on by attempting to drive a horse faster at a trotting gait than they can go; consequently they make an effort to speed up faster than they can trot. It is also brought on by driving an overloaded horse fast, and I have known trotting horses to become hitchers by being allowed to carry the head too low when in training. The latter discontinued the habit when head was reined high up. Many cases are remedied by proper shoeing, light shoe on foot he hitches with, shoe twice the weight on other foot.

Sore Shoulders.—I have two 3-year-old colts that are doing farm work and both have sore shoulders. Can you suggest a remedy? I have steady work for them, and am very anxious to keep them at work. D. E. R., Harrisburg, Pa.—First of all, you understand the importance of having well-fitting collars. Apply the following lotion, 3 or 4 times a day: Dissolve ¼ lb. sulphate zinc, ¼ lb. acetate lead, ¼ lb. tannic acid in one gallon of cold water, and apply to shoulders 5 times a day. This is one of the best and least expensive sore shoulder remedies I have ever used in my practice or at my hospital. It should be applied to all young and tender shouldered horses and mules when they are being seasoned for hard work. It is always better to keep them well than to be trying to heal them after they get sore.

Ophthalmia.—My old mare has had several attacks of sore eyes, but they usually clear up in about two weeks. Is there any danger of her going blind? F. W. R., Oil City, Pa.—Your mare suffers from periodic ophthalmia, an incurable eye ailment. A bright light always irritates a sore eye. Apply a saturated solution of boric acid, 3 times a day. This lotion is made by dissolving all the acid you can in water. Give her 1 dr. iodide potassium and 2 dr. Fowler's solution at a dose, 3 times a day.

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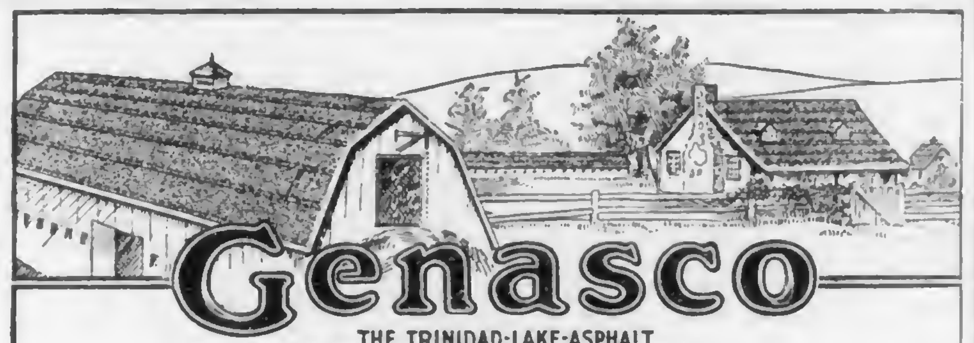

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Headle Dr. T J c813 Rutgers College

Farming on Long Island---By D. T. Hendrickson,

Monmouth Co., New Jersey

What a wonderful corner of Mother Earth little old Long Island really is! Its farms are among the finest and its crops among the best grown in this country. As to its formation, the island may be divided into two parts, the western, with deep, rich, sandy loam, and the eastern, with sandy loam and a porous clay sub-soil. Suffolk County, which comprises more than one half of the entire area of Long Island, and which is becoming one of the greatest farming sections in the East, furnishes the material for this sketch.

Suffolk County contains some very old settlements, Southold and Southampton having been peopled by hardy New Englanders but a few years after the landing at Plymouth rock. Thousands of acres of land here made the acquaintance of the plow early in the 17th century, and this land, after having been tilled for centuries, is among the best to be found on the island. The history of this land comes close to the real permanent agriculture.

The Peconic River, running from west to east, divides Suffolk County into two long, narrow regions. The north side shows hills, gullies and boulders, while the south side is a long, low, sandy stretch, interspersed with marshes. Every where, however, the soil seemed to be about the same—a light sandy loam, with a porous clay sub-soil. West of Riverhead is a ridge of sandy land, heavily wooded, which, if cleared, would furnish an ideal location for peach orchards and asparagus plantations. Some are developing these possibilities. One farmer picked and marketed 13,000 baskets of peaches last year and intends to add 30 acres to his orchards this spring. Another has 200 acres set to peaches. Peach leaf curl was somewhat troublesome last spring, caused perhaps by the muggy weather, but orchards that were sprayed with either bordeaux or the lime-sulfur solution did much better than those which were unsprayed. Suffolk orchardists not only use dynamite to blast out stumps and trees from their new land, but also in opening holes for the trees. The dynamiting, however, is done by experts. Plantations of apples, pears, plums and small fruits are also being set out extensively. On the south side the marshes are being converted rapidly into cranberry bogs, looking forward to the complete utilization for agricultural purposes of every foot of available soil in the county. Cranberry growers prefer the Cape Cod to the New Jersey varieties on account of apparent adaptability and greater hardiness.

The three great money crops of Suffolk County farmers are, and will probably continue to be, cauliflower, brussels sprouts and potatoes. A cool and moist climate, especially if tempered with sea air, has long been recognized as most congenial to the cabbage-like vegetables, and the more exacting members of the group, as cauliflower and brussels sprouts, scarcely reach perfect development except under such conditions. Suffolk County, while somewhat too hot in the summer for early maturing cauliflower, has ideal autumnal conditions for these and brussels sprouts, since not only is the air cool and moist, but killing frosts are delayed thru ocean influence two or three weeks after they have closed the growing season up state. Probably no other section in the country enjoys a better reputation for this crop.

EUREKA YELLOW DENT FIELD CORN.

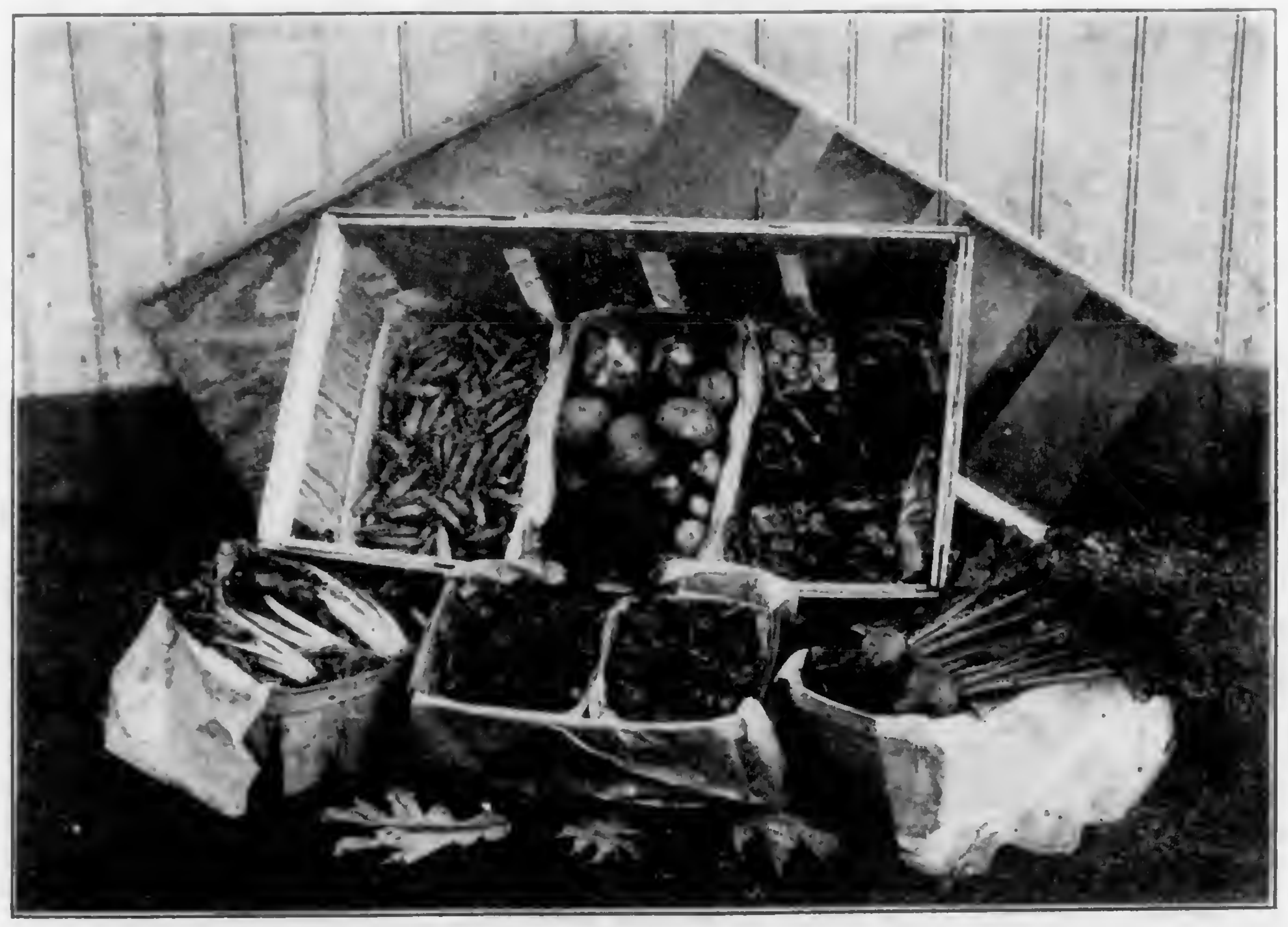
16 ft. Tall, Grown on New Soil on Long Island.

The continued dry weather last year held back the cauliflower to such a degree that some fields hardly paid for the fertilizer that was put upon them. The answer to this seems to be in the construction of individual systems of irrigation, and some growers are already making efforts in that direction. The flowers are not marketed alone in New York, but are shipped in carload lots to Philadelphia, Chicago, Louisville, etc., and last fall, for the first time, a refrigerator car of cauliflower was shipped from Riverhead to New Orleans. The venture proved successful.

Another outlet for their surplus crop is found in the packing plants. The salted cauliflower is shipped all over the country, some going as far as Seattle and Canada. A number of shipments have also been made to foreign countries. To show the great divergency in prices, early last fall cauliflower sold for 90 cents a barrel, while in February first-class flowers were selling for as high as $5 per barrel. The packing plants paid on the average 1½ cents a pound.

Brussels sprouts are grown thruout the eastern end of Long Island, covering much the same section as cauliflower, and on the same soil and sites. Harvesting begins as early as the middle of September but the shipments are light until well into October. The largest growers gather and stack the plants, and the sprouts are picked at leisure thru the winter, adjusting the work to the markets and the steady employment of labor. The warm and wet weather this winter played havoc with the crop. The outer leaves had turned yellow, and many of the sprouts were decayed. The price is good, from 5 to 9 cents a quart, but the loss is heavy and is felt by the farmers to a great extent. It would have paid better this year to have marketed the sprouts early, despite the fact that later sales are generally the best.

Long Island potatoes are wanted the world over, and are unsurpassed for quality. The yield is also heavy. State and Maine potatoes have sold at 45 cents a bushel when Long Islands were bringing from 65 to 95 cents. Long Islanders are increasing the producing power of the soil by correcting acidity and liberating inert plant food. Suffolk farmers last fall applied considerable lime to their grass and grain seedings. This has not been practised to any extent heretofore, owing to the theory that lime has a tendency to increase the activity of scab fungus. But since a rotation of crops is now being practised no serious apprehensions are felt on that score. One farmer at Water Mill averaged [illegible] to



THE LONG ISLAND HOME HAMPER WHICH IS SOLVING PROBLEMS IN DIRECT MARKETING.

the acre last fall from a very large acreage, and another had a 20-acre field which averaged 370 bushels to the acre. O. P. Roers grew the prize bushel. It took just 31 to make the bushel, and six of the "spuds" weighed 14 pounds, averaging over two pounds apiece.

Suffolk County growers are strictly up to date. All the latest farming utensils—sub-soiling plows, manure spreaders, transplanting machines, potato planters and diggers, etc., are in use. The questions of manures and fertilizers are being worked out from a scientific standpoint. Their fields are kept filled with well-rotted humus by means of turning under heavy leguminous crops. Only the best of seeds are used. Cauliflower seed is imported from Denmark; brussels sprouts, home grown from the choicest mother-plants; potatoes from Aroostook County, Me. This careful seed selection has been a determining factor in the success of these farmers.

Grain, corn and grass grow as well on Long Island as anywhere else. Very little is sold, however, as the farmers believe in feeding it to their stock. I have seen fields of corn in Suffolk County with the stalks from 12 to 16 feet high, and husking out over 100 bushels to the acre. Yellow Dent is the variety most largely grown. Clover and timothy are largely grown, but several farmers are turning to alfalfa. Since the soil is somewhat acid, it is necessary to use from 700 to 1,000 pounds of lime or 400 pounds of wood ashes to the acre. In planting, drilling the seed has been found superior to broadcasting, 18 to 20 pounds of seed being ample. Spring sowing is followed. After the first year, the growers go over a field with a disk harrow after the second cutting to split the crowns, causing the plants to multiply.

Market gardening is an ever-increasing phase of agriculture in Suffolk County, where every variety of vegetable is grown. Irrigation seems to be the one thing needful to make it a complete success. For the past few years the greatest barrier to a maximum crop has been a lack of moisture at the critical period. The artificial application of water to the light soils is a subject of vital interest, not only to gardeners, but to farmers generally. An example is given. On a farm fertilized for three consecutive years by the use of two carloads (over 60 tons) of stable manure and 1,000 pounds of chemicals per acre, was planted potatoes. One section was irrigated during the dry season, the other was not. The unirrigated section yielded 218¾ bushels, the irrigated 620 bushels, the net profit being close to $300, and the highest cost of which I have ever heard for equiping an acre for over head irrigation was $106.

Long Island market gardeners have made a marked success with the Home Hamper. This is a light carrier, measuring 24 inches long, 14 inches wide, 10 inches deep, weighing, packed, about 35 pounds. It contains six baskets, holding about one-half peck each, and is filled with from seven to twelve varieties of vegetables, berries and fruit in season. Each basket is carefully packed and lined with green wax paper, which not only adds to the appearance of the package but also serves to keep the contents crisp and fresh. The hampers are packed and shipped early in the morning and are delivered in Greater New York about noon. The consumer always gets his money's worth of crisp, fresh, palatable delicacies, while the farmer saves at least the commission and middleman's profit.

Dairying is becoming more and more important. The nearness to the large cities, the great summer resorts along both the south shore and the Sound, the luxuriance with which alfalfa and the sweet pasture grasses grow, all tend to add an incubus to the industry. Within the memory of men still living, the island supplied the bulk of the milk consumed by New York and Brooklyn. The mere fact that the particular section then occupied by dairies is now occupied by great estates or modest suburban homes has nothing to do with the present case, for exactly the same kind of soil, in precisely the same kind of climate exists on upwards of 200,000,000 acres lying within 50 or 60 miles of the great cities.

It goes without saying that poultry raising should flourish on the island. Successful chicken farms are to be found scattered everywhere on the island. On the south side and along the river, duck raising is the principal business. At Speonk alone, last fall, one poultryman marketed 60,000; a second, 40,000, and a third, 30,000. One man of Riverhead has two 7,200-egg hot-water incubators at his duck farm. Despite the high price of grain, these men are making money.

Modern methods in Long Island farming are rapidly replacing the slack methods and erroneous practices which have in less favored territories destroyed, temporarily at least, the soil's fertility and filled such sections with abandoned farms and deserted villages. Progress is the watchword of her farmers.

Agriculture in Our Public Schools.

By C. C. HULSART, Monmouth Co., N. J.

Some years ago, in conversation with one of our graded school principals, the question of agriculture came up. He placed a book in my hand and asked what I thought of it. I looked at the title, "First Principles of Agriculture." I also noticed the author's name, and being well acquainted with him and knowing him to be a man well versed in the science of agriculture, I said I believed it to be a good book and asked what my friend thought of introducing it in his school. The answer was, "I don't believe I could club half a dozen pupils in our school into studying it." I believe the man was right and sincere in his belief. But why is this so? And why has agriculture had such a horror to the school boy or girl? There are two reasons. The first and main one is lack of knowledge along agricultural lines. Let a student see there is something in a business or calling besides hard work, and help him to solve some of the problems so that he may gain courage by new light, then much of what was before considered only drudgery becomes congenial labor. The second reason, in the past, has been from a social standpoint. The village, town or city population turned up their noses at every opportunity at the conventional "Hayseed," the cartoonist depicted him in various positions, clothes and attitudes, and even the street urchin had epithets to throw at him and pranks to play on him.

With all this as a fact, are not these sufficient excuses for pupils not wanting to study agricultural subjects in our schools? Times are changing, and have been for two decades or more. Today we see less of that feeling depicted above. The cartoonist has less of the kind of work to busy himself with. But why this change in so short a period? The answer is—education. Thanks to a few good honest investigators, who have honestly labored for the cause of agriculture, and thanks also, to the many periodicals that have published their findings and other able articles showing the scientific side of this business, and the fundamental principles underlying plant growth, crop production and soil management.

The curriculum of our public schools is and has been so arranged that it educates the youth away from the farm rather than toward it. This has caused our thickly populated centers to become more and more congested, and the rural districts to lose their brightest boys and girls. If this is allowed to continue the time is not far distant when we, as a nation, will be consumers instead of producers. Ours is an agricultural country and it behooves us to foster it and so educate our youth that the basic industry of our country may not only hold its own but forge ahead, in the light of present knowledge, along agricultural lines.

The problem is a broad one and much work and study must be done before anything can be accomplished. Teachers are unprepared for the work, but the time is fully ripe when a beginning should be made. If anything is to be accomplished at all in a general way, it must be done in our schools and among our boys and girls. Among the younger men still left on the farm a little can be done and is being done by the force of farmers' institutes traveling thruout our country. The older men on the farm rebel against this and refuse to accept it. If there is any one thing than another that will set the old-time farmer "kicking" it is his abhorrence of being taught what he calls "book farming." Admitting these expressions to true, then we must begin somewhere to correct past errors, or the time will surely come when we, as a nation, will be unable to feed our own people.

The past has been a course of soil robbing and not farming. The young farmer took up land in the Middle West and cropped it till it paid no living profit; then moved further west and did the same over again. He either threw his manure in the river directly, or carted it there on the ice and left it to float away with the floods of spring, not once thinking that the time was coming when his soil would rebel against the robbing process he was carrying on. The time has now come when there is no more land to be taken up and robbed of its store of fertility, hence we must do better farming. We must know what our soils are capable of doing under present knowledge and be able to make them do it.

The average farmer of the past has been groping in the dark, as is shown by crop statistics, the average wheat crop for the whole country aggregating only about 14 bushels per acre, when 40 bushels is possible when a full knowledge of the crop and its requirements is put in its production. The corn crop, too, is vastly below normal possibilities, yielding but little more than 30 bushels per acre under present management, while upward of 100 bushels is possible. Many other crops could be cited to show what can be done by a better knowledge of this subject.

We hear daily, "Our curriculum is now so full that we hardly know how to handle what we have; how are we to introduce anything new?" That is true, as it stands today, but how much real benefit is much of it to the multitude of scholars who leave school before reaching the top, and go to work for railroads, in factories, in shops of various kinds, and at all trades? Does Greek, Latin or German do these boys any real good in after life? Does geometry or trigonometry help one to shove a plane, run a saw, or handle a press drill any better with than without it? If you agree with me, then let us cut out such as is of no practical use and add agricultural studies in their stead.

Do I hear someone say that this is not as educating, that it does not broaden the mind or train the intellect as does the present method? Oh, but it does! There is not a human being but what has a tender spot in his heart for Nature; cultivate that attribute and cause it to grow and the results will be surprising. Is it not just as educating to know the plants of the field or the flowers of the forest as it is to know cube root? Is it not just as broadening to know the insects of the farm or the birds of the air as it is to know the hight of the Himalaya Mountains? Is it not just as elevating to know something of that invisible force that causes all life, assists it while living, and when the cycle of life is finished breaks it down and sends it back to the source from whence it came, as it is to know the contents of a Hebrew lexicon? One writer says, "It is a greater credit to know the ways of captivating Nature and making her subserve our purpose than to have learned all the intrigues of policy."

The past has shown to the observing mind that the farmer was a man who did little thinking; hence he was a prey to those who had been trained to think and who had learned how to do business. This has discouraged many a poor man and driven him from the farm. The thought also seems to have been that producing crops interested no one but the farmer himself. This is an error. The crops produced on our farms interest every consumer. For the past half century, or nearly so, statistics show us that whenever the percentage of production was lower than the percentage of increase in population, products of the farm rose in price, and when the percentage of increase in population and crops were reversed prices of produce fell. This has been the case ever since the opening of the Civil War. From 1860 to 1865, while many men were engaged in defending our country's flag, production was light and prices became abnormally high. This, of course, was partly due to the war and an inflated currency. From 1865 to 1870 more men were induced to go farming, enticed thereto by the past high prices. The production was greater than the increase in population and prices fell. But immediately after immigration began pouring into our country and the population increased at a greater percentage than did production, prices at once rose. During the financial panic that followed there is no reliable data to offer. During the next period of activity the same conditions existed. Now we come to the last 10 years following them down from the boo ing, we find agricultural crops on the increase in volume and constantly on the rise in price. Someone says, "Oh, that is on account of the boom." In a measure it is, but the real cause in my judgment, is the same as all to before, the increase in population, and, of course, all that population being employed. But why should crop production keep pace with the population? Because we are rece annually on our shores from one to and a half million of emigrants, who are non-producers, or, at least, a small percentage of them ever pro agricultural crops, and but few become active, intelligent farm lab ers. This horde of illiterates must be

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shown in the illustration, is attached the house, and the pipes from the ace extend to it.

Mr. Bassett's greenhouse is 20 x 30 feet, which is larger than most families would need, and cost about $300, including erection. The most of the greenhouse is used for growing flowers and ornamentals, but the space beneath the benches is used for starting celery plants, which are pricked out in flats and placed in a hot bed or cold frame. Some lettuce and other small vegetables are grown during the winter and in the early spring space is given to all the early plants needed for the garden.

Mr. Bassett does some commercial gardening, but he first supplies his own family with an abundance of the best from the greenhouse and garden, and this was his main purpose in building greenhouse. His residence is in a village of a few thousand people, and when they saw his flowers and plants they wanted to buy them, and the re was the first year after building greenhouse his orders, unsolicited unted to about $200. Mr. Bassett ates the cost of heating his greene about $50 per year, as he paid amount in addition to his usual bill for his residence for one year. we place the cost of this greenat $500, which would be sufficient it in most localities, the interthe investment is about $25 per The same city water that is used e house is also used in the greenat an additional cost of about $5 year. Including the cost of heatwith these amounts, the cost of oping the greenhouse one year is $80, if we allow a small amount incidental expenses. If a gardener ployed, his wages must be added this amount.

writer has for many years done iderable gardening under glass, he regards the small greenhouse, or ficially-heated hot bed not as a lux- but almost a necessity, if one to get the most out of life in a climate.

family greenhouse need not be rge as Mr. Bassett's; in fact, one lf or two-thirds the size would do well for the average family, and would be correspondingly less. H. Jenkins, Delaware Co., N. Y.

BASSETT RESIDENCE AND SMALL GREENHOUSE.

SMALL FRUITS FOR THE FARM

ery farmer should have an abun of small fruits, not only for se, but also for market purposes. e small fruits are easily grown, s red and black raspberries, cherand plums. In planting black rasps there is no necessity of loss of of the ground, since the plants can t in the spring in the potato field. a small patch is desired, they can lanted in the early potato field, on the average farm is not very Should more area be desired, a er field may be planted to early potatoes, for the ground that is well prepared for potatoes makes on excellent place to plant "black caps."

I planted my last berry patch with early potatoes, marking out the ground 3½ feet apart and planting berry bushes every other row, and planted the row in between with turnips, 15 inches apart and a potato between each bush. Thus in the row with the berries there was a hill of potatoes every 3½ feet, while the other row was planted right along, making the berries 3½ by 7 feet apart. Good cultivation for the potatoes is good cultivation for the berries. If potatoes are well cared for in just an ordinary season the crop will pay for the bushes and also for raising the double crop of berry bushes and potatoes and all other expenses.

When the berry bushes are about two feet high they should be pinched back, so that latterals will start out and make a nice stocky, bushy top.

About six years ago I planted a patch as above stated, and have since cut back new canes, cut out the old ones each year, and we have had berries to sell and to keep, and at this writing the prospects are good for a crop this season. The bushes should have been mulched as soon as the potatoes were dug. As soon as the potatoes are dug, I put a mulch of buckwheat straw about a foot deep over the ground.

Cherries and plums can be planted in conjunction with the berries and potatoes, tho the red cherries may be planted anywhere and on any soil, provided it is not wet. Cherries require well drained soil, and in fact no fruit will do well with wet feet. We have had cherries and plums to sell and for family use for the last 25 years, and have sold as high as $18 worth of cherries from a single Red Montmorency tree.

When ordering stock for small fruits, if you have not an apple orchard on the farm, make plans to set one in the spring, half early varieties.—Joseph E. Fischler, Tioga Co., Pa.

OVER-PRODUCTION OF APPLES.

By J. A. Cohill, Manager of Tonoloway Orchard Co.

Apple culture is one of the leading enterprises of the day in the line of agriculture. A pursuit in which the city man as well as the farmer are enthusiastic, and it is already a loot for the real estate game. The over-production boogaboo is a question that nearly everyone you meet can answer.

For anyone to say what the future will bring for the apple business should not be considered seriously, but taken only as a good guess. The widespread interest which the apple industry is causing on account of the enormously

Flying Dutchman Low Down Spreader

Both Apron and Beater Take Power Direct from Axle

Look at other endless apron spreaders. See how the apron is driven from one end of the Beater? That wastes power and puts an awful strain on the Beater.

On the Flying Dutchman Spreader the Apron and Beater are entirely independent of each other. Each takes its power direct from the axle. You can readily see how this greatly increases the power and lightens the draft.

Lightest Draft Low Down Spreader

Beater driven by one wheel—Apron by the other.

You do not waste half of your traction power as you do when you drive entire machine from one side of the axle. Then, there's the great advantage of simplicity.

Entire Machine is operated by ONE lever.

There is no chance for an inexperienced driver to make a mistake and damage the machine. He cannot get hold of the wrong lever—for there is only one—it operates both Beater and Apron.

It is positively impossible to start the Apron until after the Beater has been put in operation.

The range of adjustment is very great. You can spread any amount from 4 to 28 loads to the acre. And in addition there is a reserve speed of over 40 loads—which quickly cleans out the last part of the load.

Whether the Flying Dutchman is in or out of gear, it is securely locked in that position. It cannot possibly change until you move the lever. If you have ever used a spreader, you will appreciate this feature.

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Look for the Flying Dutchman Dealer

He will show you any of the famous Flying Dutchman line of implements—or send us your address on a post card and say what you are interested in and we will mail you some interesting farm booklets. Why not write for these booklets today? Address Dept. 129.

Moline Plow Co., Moline, Ill. Eastern Branch: Adriance, Platt & Co., Poughkeepsie, N.Y.

LIME for the soil only. Our Agricultural Lime can be applied at the time of seeding and will not burn anything. Will drill, broadcast or scatter. We guarantee immediate shipment, analysis, mechanical condition, fineness, quick results and no burning. Litmus paper free. Write us

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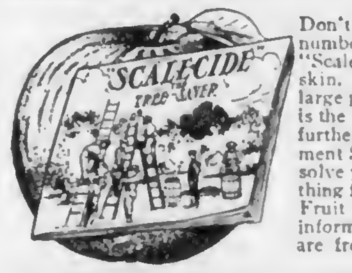

Don't grow cider apples. Rid your trees of scale and fungous pests and grow number one apples by using "Scalecide"—the one absolutely sure scale spray. "Scalecide" is easy to handle, it will not clog or corrode the nozzle or injure the skin. It will build up a poorly paying, run down orchard and make it return large profits. It will maintain a good orchard in prime condition. "Scalecide" is the best spray for San Jose. It kills every scale it reaches. "Scalecide" goes further, is cheaper and more effective than lime sulphur. Endorsed by Experiment Stations and used by the best orchardists everywhere. "Scalecide" will solve your scale problem. Our SERVICE DEPARTMENT furnishes everything for the orchard. Write to-day for our new booklet "Pratt's Handbook for Fruit Growers" and "'Scalecide'—the Tree Saver." They contain valuable information for orchardists. Every fruit grower should have them. Both are free. B. G. Pratt Co., Dept. "A," 50 Church Street, New York City.

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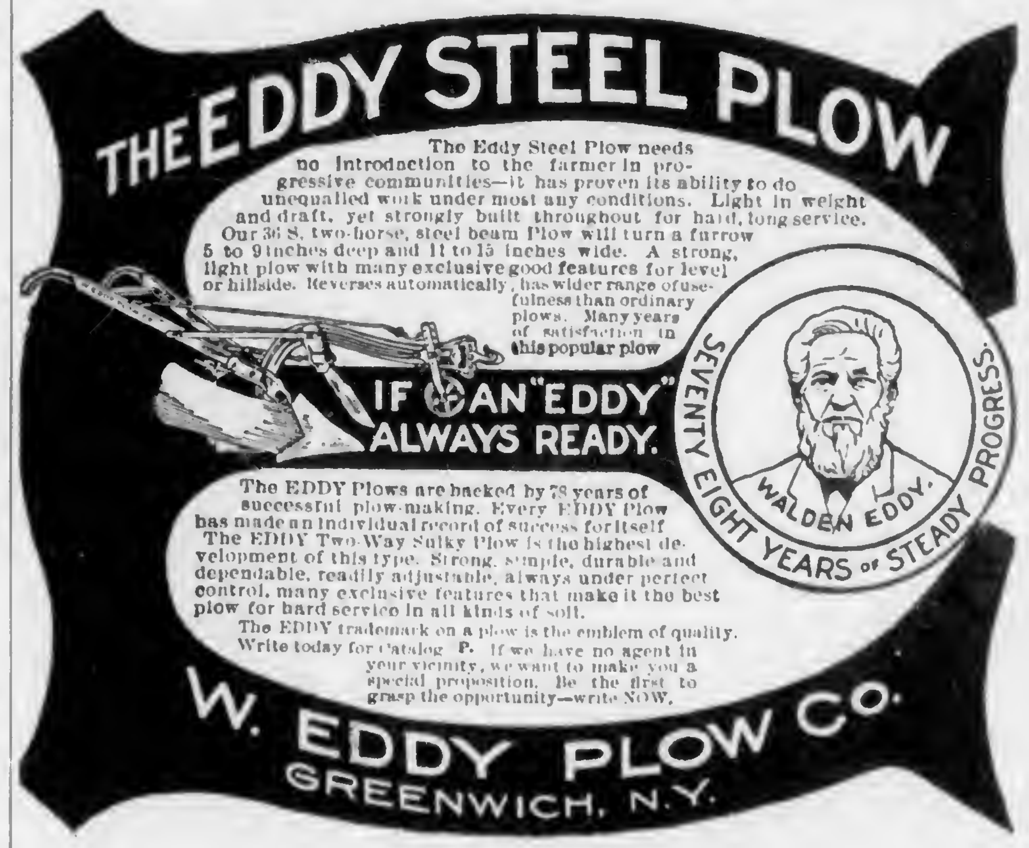

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The Eddy Steel Plow needs no Introduction to the farmer in progressive communities—it has proven its ability to do unequalled work under most any conditions. Light in weight and draft, yet strongly built throughout for hard, long service. Our 36 S, two-horse, steel beam Plow will turn a furrow 5 to 9 inches deep and 11 to 15 inches wide. A strong, light plow with many exclusive good features for level or hillside. Reverses automatically, has wider range of usefulness than ordinary plows. Many years of satisfaction in this popular plow

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The EDDY Plows are backed by 78 years of successful plow-making. Every EDDY Plow has made an individual record of success for itself. The EDDY Two-Way Sulky Plow is the highest development of this type. Strong, simple, durable and dependable, readily adjustable, always under perfect control, many exclusive features that make it the best plow for hard service in all kinds of soil.

The EDDY trademark on a plow is the emblem of quality. Write today for Catalog P. If we have no agent in your vicinity, we want to make you a special proposition. Be the first to grasp the opportunity—write NOW.

W. EDDY PLOW CO.
GREENWICH, N.Y.

IRREGULAR PAGINATION

large plantings in the various fruit sections all over the country naturally causes the question to be asked, Will it be overdone? Will there be more apples produced than can be sold at a profit?

There have been many land speculators, real estate dealers, promoters, and orchard companies who are doing a great amount of good advertising for the benefit of the fruit grower in general, but I am sorry to say at the expense of the five and ten-acre man, who imagines he has independence.

The majority of our orchards are in bearing, and we hope to make a fair stake before the theoretical calamity arrives; but were we to sell our 800 acres of apple trees today, tomorrow would likely find us planting more apple trees on our other farms. Have the numerous agricultural publications been misleading investors upon the profits in apple culture? I don't think so. I believe they have conscientiously warned investors that capital, time and patience, as well as economy of labor and thoro business methods are necessary for success in fruit growing.

Are the profits in apple culture as large as they are pictured? At the present time there is no industry I know of that will pay as handsome profits as the apple business, providing, of course, the orchard is a good one, managed economically and run on good business principles. We are raising apples for less than $1 per barrel and selling for from $2 to $5. What if keen competition did require us to lower the above prices, wouldn't there still be a fair profit in it?

The apple crop will increase in the future, that we may consider almost a certainty, but isn't the population of the country also increasing in leaps and bounds? By teaching the public, by systematic advertising, the value of apples as a commodity, the 200 different ways of preparing them, and giving them the quality, the consumption will increase rapidly. It will be necessary for fruit growers to co-operate in handling the crops by means of storage throuout the year. The markets should be supplied as rapidly as the fruit may be consumed, and not dumped on the market in a short period of several months, as the case may be now.

The apple crop of 1912 was an approximated yield of 40,000,000 barrals in the United States, according to estimates. Statistics show that this is no more than a normal crop, yet the prevailing prices of apples have been low thruout the season. In my opinion, we fruit growers have been devoting too much time to production and not enough energy to distribution. Our methods have much room for improvement, and I am absolutely convinced that we can increase consumption by paying more attention to more systematic advertising.

The apple growers of the East are unorganized along any systematic lines, and it would seem that our first steps to get together would be thru the Eastern Fruit Growers' Organization. This organization should be made a live one. Our western competitors, I think, have made a more serious mistake in having too many such organizations. Having something like several hundred different fruit growers' associations, in five states of the Northwest, local jealousy will not permit them to unite under one head. They are all striving for supremacy, so I would think that now would be the opportune time for the eastern growers to get together to make the Eastern Fruit Growers' Association, now in operation, a good live one, and thru which we ought to control our own large eastern markets. In my opinion, we will be forced to it later, so why not get ahead of our western competitors?

The International Apple Shippers' Association, thru which nearly all apples grown in the United States are handled, have already started a crusade of advertising by electing an advertising committee, naming Mr. U. Grant Border, of Baltimore, Md., chairman, and have made arrangements to publish "209 Ways of Serving the Apple" in a small booklet form to be distributed free to all jobbers, who will supply them to retailers to be given away to their customers. Upon thought of this, think of what this form of advertising means to the fruit grower. Now let us combine with this association and give them apples as their customers demand them.

It is useless for us to talk about producing the fruit and selling it direct to the consumers, excepting only on a small scale, for I doubt whether parcel post will ever relieve the situation. We therefore must deal thru commission men, so why not co-operate with them in every way we can? They are not all robbers, as some farmers and fruit growers might imagine.

This advertising scheme is not a theoretical one, it has proven entirely practical in numerous other lines. Many patent medicine concerns have made fortunes by such methods of advertising, and other such articles as breakfast foods, crackers, clothing, etc. The average housewife does not know. She must be educated. Teach her the difference between Grimes' Golden and Ben Davis and then see how rapidly consumption of fruit will increase. We should establish better confidence with the buyers, and make some effort to relieve the retail situation.

Of the importance of these two features there is little doubt, for nearly all the large apple buyers tell me that they are the fruit growers' greatest evils. We will establish the confidence of the buyers when the Sulzer law goes into effect July 1st, for the simple reason that we must, or the law will handle us. The Sulzer bill creates a standard pack, with a standard barrel, and if the law is upheld it will necessarily relieve this situation.

What about the retail problem. He is the one man the fruit grower must have, and yet must fight, but public sentiment will help us, thru the press, to make him lower his prices. The 100 percent profit must cease or consumption will not increase. Public sentiment has accomplished many wonderful things, and I feel confident that the existing conditions will be remedied for both the grower and consumer.

A NEW SELLING FORCE IN THE APPLE INDUSTRY

One of the strongest selling forces of the 20 century is now being applied to the apple industry. Co-operative advertising is educating the public to make apples a staple food in the household, thus insuring sufficient consumption to care for the ever-increasing crop. The results secured in a few months are so great that a movement is now under way for a country-wide advertising campaign, financed in the manner that the various governments have used when it was desired to raise large amounts without unduly taxing any one individual—the stamp plan. In this work growers and shippers, for their mutual advantage, will join hands. Apple growers have been so interested in the problems pertaining to apple production that they have not devoted much time to considering how the fruit can be marketed with more profit to themselves.

Breakfast foods and many other products of less value to consumers than the apple have increased their distribution enormously thru judicious advertising. With such a selling force ready to be applied, why should the apple trade face year after year the problem of under-consumption? Because no satisfactory answer could be found to this question, the International Apple Shippers' Association at its last convention decided to give co-operative advertising a "try-out." The object was not to benefit this particular association more than any other class. The movement was a broad minded one, the association seeking to bring about a condition that would benefit growers and shippers alike.

An advertising committee was appointed, under the leadership of Mr. U. Grant Border, of Baltimore, a dealer of long experience. In a short period, with but limited means at its disposal, this committee has accomplished results that prove beyond the shadow of a doubt that a country-wide, co-operative movement to advertise apples would bring rich returns. In newspapers and journals throuout the length and breadth of the land the Apple Gospel has been carried. Into the homes of thousands of consumers booklets containing 197 choice apple recipes (with many convincing reasons for using more apples) has been sent. Fifteen hundred retailers in the large consuming centers have taken the trouble to write the chairman, promising their co-operation along the lines his committee suggests. And to 20,000 dealers thruout the country the wisdom of large sales at smaller profits has been shown.

The splendid work to this aggressive committee naturally awakened the interest of growers and shippers in all sections of the country. Too much was being accomplished, too much was yet to be done, to hamper the committee for lack of funds. The question arose, How could this vital work be financed so that the expense would fall equally on everyone who will derive benefit from the advertising, and how could it be divided so that it would not be burdensome to any grower or shipper?

By a stroke of genius, the stamp plan was thought of. To all who have considered it, the plan appears an ideal way of providing the funds. Each box of apples shipped will bear a one-cent stamp, and each barrel a two-cent stamp. Thus every grower and shipper pays only his just proportion. If he ships 50 packages he buys only 50 stamps; if he ships 1,000 packages he buys 1,000 stamps. Thus the expense is equally borne by everyone interested.

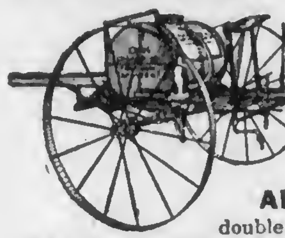
To safeguard the money collected from the stamps, the plan provides that the entire issue be placed in charge of a trust company. This company, thru its agencies throuout the country, will sell the stamps to the growers and shippers. The proceeds will be placed to the credit of the advertising fund, and will be drawn upon thru checks or drafts signed by three officers of the body or bodies issuing the stamps and countersigned by the chairman of the advertising committee.

As already stated, the policy underlying the campaign will be to make the advertising help, not any special class, but growers, shippers and dealers everywhere. Better markets in all sections of the country mean universal prosperity.

On August 1 the stamps will be placed in circulation. Every grower and shipper is asked to place one on each package he sends out. Thus, at a low and equitable expense to each, a sufficient fund will be created to make the new crop move to a lively tune that will be a welcome contrast to the dead march that has accompanied King Apple in the recent past.

"For the land's sake use Bowker's Fertilizers; they enrich the earth and those who till it." Advertisement

O. K. Champion Sprayer



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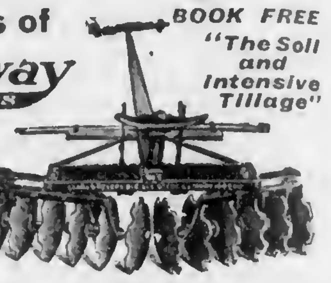

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Don't waste money buying ordinary kinds when a CUTAWAY seldom costs more—and often much less. At least, get facts about CUTAWAYS (CLARK'S. If your dealer can't supply you, write us

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GRAIN GROWER! A SPECIALTY FOR YOU.

Are you getting best possible results from your crops, do you know? In these days of intense competition, men who win are men who make it their business to "KNOW HOW." Do you believe you owe it to yourself to find "HOW." To get best yielding seed at lowest cost, even if you raise good crops, we guarantee you still better—use that invention. Write a postal, costs you nothing, for information.

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SEED POTATOES

Extra Early Six Weeks, Early Ohio (Original Pink), Best, new, late, "Dibble's Russett." $1.00 per bushel, f. o. b. No scab, rot or blight.
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LIME-SULPHUR HYDROMETER Used By All Progressive Fruit-Growers

Price By Mail With Test Jar and Instructions.... $1
Agents Wanted Everywhere
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Don't pay a high price for a sewing machine when most of your money goes for the agent's large profits and heavy expenses. The *factory cost* of Penn. Farmer sewing machines is as high as upon any made, but we save you the agent's profits and expenses.

Our machines have all latest improvements, ball-bearings, self-setting needle, self-threading shuttle, automatic tension release, large substantial arm, automatic bobbin winder, complete attachments and everything that goes to make a first-class up-to-date machine.

They are built thruout of the very best of materials, handsomely finished and will do anything that can be done upon a family sewing machine.

GUARANTEED FOR 20 YEARS.
WE PAY THE FREIGHT.
YOUR MONEY BACK IF YOU WANT IT.

Every Penn. Farmer machine is sold on a definite contract that we will refund money in 90 days if not entirely satisfactory to the purchaser. You run no risk and we pay all freight charges.

SEND FOR OUR HANDSOME ILLUSTRATED CATALOG.

containing valuable sewing machine information which you should have before you purchase a machine from any one.

NOTE.—We prepay freight charges to any railroad freight station east of the Mississippi River and south to Tennessee and make freight allowance to points beyond these limits.

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Poultry

FERTILITY IN EGGS FOR HATCHING

Every hatching season there are a great many batches of eggs set, of which two-thirds or less of the eggs in the settings hatch. This is more particularly the case with the general farmer's sittings than with the professional poultryman. Some of this difference can safely be attributed to the fact that the farmer-poultryman seldom tests-out his sittings once the eggs have been put under the hen; but back of this is the infertile egg. Now, altho there is nothing that can be employed to make an infertile egg produce a chick, there are several things in the way of flock management that will so improve the condition of both sexes in the flock as to materially reduce the number of non-hatchable eggs laid. These practices are simple and less expensive by far than the one of increasing the number of male birds in a flock shortly before the "setting-eggs" season arrives—besides the latter method of "insuring" fertile eggs does not always work; too many males being as bad as too few.

BUFF LEGHORN HEN. A WINNER AT THE STATE FAIR.

I wish to call the attention of my brother farmer-poultrymen—and especially those that are going to try for early hatches this year—to some of these aids to fertility. First, it is best to look over the flock carefully and take out and separate from the breeding flock all those females that are too old, or too small, or that are afflicted with some deformity or disease. Often some of them are good layers, but they are not good stock to breed from. The regulation of the food of the remainder—the breeding flock—is the next step. If their food be given attention both as to quantity and quality the fowls are found to be in a more normal condition and the eggs for hatching likely to be of the best content. A very fat hen not only will not lay many eggs, but those she does lay will almost invariably prove infertile.

In the feed of the breeding flock the proportion of those feeds rich in carbon (which go to producing heat and fat), should be lessened and the proportion of those containing a high percent of nitrogen and albumen should be increased. Contrary to the prevailing opinion of those who have not investigated the matter, meat is a food containing none, or very little, of the fattening elements. Lean meat consists largely of albumen, which enters to a large extent into the white of an egg, and therefore is an excellent component part of the feed at this time. Milk also is valuable for the same reason. Indian corn and potatoes both contain much carbon as well as nitrogen, and are fattening. Linseed meal and cottonseed meal also belong in this class, containing an even greater proportion of fattening elements. Therefore, as spring approaches the proportion of these foods in the mash (wet or dry) should be lessened, while the ration of wheat, buckwheat and oats—which furnish a large proportion of albumen—should be increased. This holds equally true, of course, in either dry-grain feeding or the compounding of mashes. Wheat bran contains more of the requisites for renewing animal tissues and for egg-making than does any other uncompounded feed. "Shorts" has also been proven very good dry-mash feed for this purpose, but personally I have found "coarse flour" (the entire wheat kernel coarsely ground and not sifted) well ahead of these others in the matter of proper constituency for the egg produced as well as the stimulation—not forcing—of production. But the use of corn is not discontinued altogether, until warm weather arrives. From the beginning of the "eggs-for-hatching" period, its use should be restricted to the evening feed (cracked or whole) and its proportionate use as such reduced as the weather steadily moderates. In this latitude I find the most satisfactory way to accomplish this is by mixing the cracked corn with one-sixth wheat or oats about March 1st, and reducing the portion of corn and increasing that of wheat and oats one-sixth each week until, by the arrival of warm weather, the corn is entirely eliminated. The greatest, and I am about believing the only, real value of corn to poultry is for its heat production.

Another aid to good hatches that is worth while is the providing of healthy surroundings for the flock and healthy conditions in the fowls themselves at this time. A very striking demonstration of the futility of trying to have fertile eggs while neglecting to consider the food and healthful surroundings of the fowls came under my observation last season. A neighbor had a pen of very fine April-hatched black Langshans, the product of three settings of eggs bought from a leading breeder near-by. Desiring to keep their eggs unmixed for hatching last spring she separated the birds of this breed from her other fowls about March 1st, but failed to provide the necessary variety of food and confined them in an old, uncleaned calf pen. Not only did their egg production fall off but all their eggs that she set proved infertile, much to her mystification and sorrow. A setting of eggs secured from them some weeks later, after they had been transferred to an outside run on sod and their food changed, gave a 75 percent hatch.

Again, as the weather becomes milder the hens should be fed more sparingly—allowing, of course, that they have been sufficiently fed theretofore, and not nearly starved—in order to compel them to take more exercise. Especially is this worth observing if one is keeping some one of the heavy breeds. As a rule, not only do the active breeds—and the most energetic foragers of these breeds—produce the greatest number of eggs, but their eggs will hatch better. There is no doubt that where given the opportunity, their greater activity gives them both greater health and greater variety of food than the large, inactive breeds would have under the same conditions and in the same location. Clark Westford, Schenectady Co., N. Y.

STARTING THE CHICKS

There is more harm done by over than by under feeding. Fortunate are those who can give the chicks a dry, sunny slope; yet as the weather grows warm shade is also desirable, and the chicks will soon learn to seek it during the noontide hours.

There is a popular notion that incubator chicks are immune from gapes. This is a great mistake. The fact is, the gape worms are apt to be in the soil if the previous flock has been infected. The chicks pick up the worms with their food, and then the trouble begins; or they may get it thru the earthworms, which breed this parasite. The reason the incubator chick is saved from the pest is that it is usually kept in the brooder house until old enough to overcome the ravages of the gapeworm. When incubator chicks are allowed to run on ground previously occupied by chicks with gapes, they will contract the disease as readily as those reared by a hen.

Little chicks like a variety in green food. Chopped onions with their regular ration will prove healthful as well as agreeable. And they are equally fond of dandelions. If the lawn is stocked with this pest there is a good incentive toward fighting it, while at the same time putting the weed to good use.

Cleanliness is an essential, but a dry brooder is equally so. If the weather is such that the coops can not be thoroly dry after cleaning, avoid the scrubbing process until sunshine can be depended upon to co-operate. The daily changing of newspapers will help to solve this problem.

Keep plenty of charcoal and sharp grit at hand constantly. It takes time to prepare these, but not so much as to doctor up sick chicks.

There is usually a larger percentage of cripples among incubator chicks than among those hatched by hens. The general rule is to get rid of these at once. And yet we have had those with seemingly almost useless limbs develop and in a few days be able to run as readily as the best of the flock. But they should be separated from the others at first, if it is decided to give them a chance in the world. For chickens are veritable cannibals with any unfortunates in their tribe, and the savage instinct is shown even in the earliest stage of babyhood. If anything unusual is discovered in anyone of the flock the rest will peck and peck until the unfortunate is literally torn to pieces. A box with soft cotton or wool will serve for a safe bed until its chances for outgrowing the deformity can be determined.

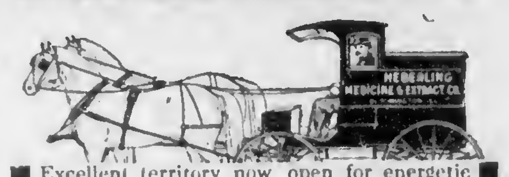
When milk is given the utmost caution should be used not to allow it to become sour. Better let the regular fountain which supplies drink at all hours contain water only. Give the milk at feeding time, and empty out any which may remain.

A feeding board is not only a convenience, but a saver in feed; for little or none is wasted in this way. Then after the meal the board can be brushed off, and there is no danger of the chicks getting foul food a day or two old, as they may do when the meal is spread upon the ground.

Give the little chicks material in which to scratch. It is their best form of gymnastics. Prepared chick food or bran mixed with sand will cause them to dig for a living. Wheat is an excellent food as soon as they are able to manage it.

Those having plenty of sour milk have a valuable source of food supply in cottage cheese, which is as wholesome for the chicks as it is enjoyable to them. Give it quite dry. Mashes, "mushy food" of all sorts are almost sure to induce indigestion.—Bessie L. Putnam, Crawford Co., Pa.

Better Than Farming



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WHY INCUBATOR CHICKS DIE

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The Dairy

APRIL AND MAY ON THE DAIRY FARM

It is always a perplexing problem to get the cows to grass without checking their milk yields and at the same time without cutting down the yield of the pastures for the summer. This problem is greatly simplified if we have an abundance of well-prepared silage at hand. This furnishes the succulence that grass does, and makes the change less abrupt. With plenty of silage one can afford to keep the cows in the barn until the grass contains sufficient nutriment to produce a maximum flow of milk. Nor is it much of a problem to the man who has plenty of hay and grain. He can simply refuse to injure his pastures, and he will be wise in so doing.

Many dairymen are not in a position to do what they know is best. If hay is scarce the temptation is great to turn the cows out before the grass is fit. In some cases this must be done. Possibly no roughage can be bought in the neighborhood at any price. The cows are turned out and graze the pasture so close that it can not furnish good grazing during June and July. The spring is here and we can not do much to improve conditions for this year. However, we must avoid similar losses next year. We can harvest more corn and feed the cut and shredded fodder during the early part of the winter and hold over the hay and silage for spring feeding. We can seed more land to hay and forage crops, and thus have more feed for the cows next spring. A large portion of these spring losses are due to a flaw in our system of feeding our cattle. Buying high-priced grain feeds often seems like a hardship, but buying roughage for dairy cattle is like pouring water in a rathole.

If winter rations are continued until the grass becomes fit for grazing the dairyman has the right to expect that his grain bills will materially decrease, or disappear altogether, for there is no balanced ration yet discovered equal to good pasture, and still every dairyman knows full well that his pastures will furnish a full ration but two or three months out of the year, when he will again be met by the same problem of how to furnish a full ration which will leave a profit. Necessity compels many dairymen to utilize considerable of their land for pasture, consequently it is not my purpose to advocate an extensive or exclusive system of green soiling crops. However, few dairymen appreciate the value of soiling crops in tiding the cows over periods of dry weather and short pastures. Soiling crops will help wonderfully in maintaining the milk flow without extra cost except the item of additional labor; while short pastures will result in a falling off in milk yields and flesh condition. How then is the cheapest and most efficient method of supplying additional food for the cows during the pasture season?

Fortunately over the most of the eastern states it is unnecessary to make elaborate preparations for the late summer shortage of pasture and early shortage seldom occurs if judgment is exercised in turning the cattle into the pastures. Where oats and peas, corn, clover and alfalfa thrive, no other crop exceeds them in the amount of forage yielded per acre, and no other crop exceeds them in the amount of profits they give when harvested in the ordinary way for winter feeding. The best winter roughage crops and the best soiling crops are thus the same. This fact has proved a stumbling block to many dairymen, who have allowed many dollars to slip out of their hands in losses on suffering cattle, in keeping back their feed crop for winter, rather than cut and feed them green. The better way is to consider that they already have produced more feed than any other crops that could be grown on the same land, and actually a greater yield than any pasture grass has produced on the same area in an entire season.

A PROBLEM IN PROFITS.

The fertilizer value of a ton of hay, based on present prices of nitrogen, phosphoric acid and potash, is approximately $3.50. Baling costs from $1.25 to $2.00 per ton; hauling 75 cents per ton. How much actual profit does the farmer get per ton at present prices of hay?

For early feeding, oat and pea forage is exceedingly valuable. This crop should be sown early and at various intervals during the spring. I prefer to sow about equal parts of each kind of seed, using about three bushels of the mixed seed to the acre. It is ready for feeding as soon as the oats are in the milk stage of their development. For a herd of from 28 to 32 cows we sow two acres each week and make four sowings, one as soon as the soil can be worked, the next two weeks later and the last about three weeks later than the others. These two-acre patches leave considerable each time to be cut and cured for hay. Those dairy feeders who are already using these feeds will be sure to have plenty of this valuable mixed crop to cure for winter use. In cutting it for hay it should be allowed to get a little beyond the milk stage of its growth, but not too ripe. If the peas are hard, the cows do not relish them so well. If the crop is ripened and threshed, the grain may be ground and will give an excellent balanced grain ration for the dairy cow.

Many dairymen who have succeeded in getting small fields of alfalfa started on their farms can realize the most from it by using it as a summer soiling crop to supplement pastures. Alfalfa is the best soiling crop that we can grow on our farms. When using alfalfa for soiling purposes it is well to keep in mind that it is dangerous to feed hungry cattle all they will eat of green alfalfa, not wilted, as it may cause bloat. I like to cut sufficient at one time to last three or four days and allow it to become wilted, and then pile it in cocks and cover them with hay caps so that it will escape drying to brittleness. There is no danger in feeding moderate quantities if it is wilted and handled in this manner before feeding.

Green corn makes a very acceptable feed for dairy cattle. Better results may be secured by running it thru a cutting machine and feeding a little dry grain along with it. The feed may be still further improved if green alfalfa is cut with the corn. So efficient is this combination in feeding dairy cattle that many dairymen prefer it to ordinary pasture grass and the returns from a few acres of corn and alfalfa cut together and fed green are fully four times as much per acre as a crop of pasture grass on similar land. It is true that when corn and alfalfa are cut green they contain less nourishment than when they are allowed to reach a proper degree of maturity, but when fed green there is almost no waste; even the stalks being eaten. These crops cut green and used for soiling purposes give greater net profits than if allowed to mature and are fed from the mow and silo.

At this time of the year dairymen should not forget that their profits depend fully as much upon their skill as farmers as upon their ability to coax their cows to produce large yields of milk from purchased foods. We need more producing dairymen and fewer of the manufacturing kind. The producing dairyman will plan to grow the best food crops for his cows and reduce the cost of purchased feeds to the lowest possible notch. If one will note the character of the feeds most in evidence thru the dairy sections he can not fail to observe that by far the largest part of them are the "mixed feeds," comparatively low in protein (the only element the dairyman has any reasonable excuse for buying) and high in fiber, of which he now has a surplus in his farm-grown feeds. The very best feeds, those containing the most digestible protein, are neglected because the cost per ton is greater. Now is the time for dairymen to get busy and grow on their farms more of the feeds their cows require; alfalfa, clover, oats and peas and corn, both as roughage and grain, always keeping in mind that hay cut early and properly cured and well-made silage will replace daily a pound of grain in the cow's ration.

The fences should be repaired before the cows are turned in the pasture. It is much easier work to drive posts and repair fences early in the season, before the ground becomes settled by the rains. If the herd is turned out before the fences are in good condition the cows are sure to find the weak places and acquire bad habits that will prove a nuisance during the whole season. If the cows are satisfied that the fence was put there to mark their limits of range, they will settle down and cause very little trouble so long as their supply of food holds out.—W. Milton Kelly, Erie Co., N. Y.

NAVY BUTTER KEEPS WELL

Two hundred and seventy-seven samples of butter packed for the navy last spring and summer were recently opened and examined by experts at the

Department of Agriculture, after having been kept in cold storage for from seven to ten months, and were found to be of fine quality, being graded as "extras," the highest market grade. The excellent keeping quality of this butter is attributed to the fact that it was made from pasteurized sweet cream.

The United States Navy requires about 600,000 pounds of butter annually, which must be of high grade and good keeping quality, as it is sometimes necessary to provision a fleet for a cruise of several months which may extend to tropical waters. At the request of the Navy Department, the Dairy Division of the Department of Agriculture has prepared the specifications for the navy butter and supervised its manufacture in recent years.

The specifications call for fresh butter, made during the early summer from pasteurized sweet milk or cream; it must be strictly "extra" in grade when scored at the time of packing; the moisture must not exceed 13 percent in tinned butter and 14 percent in tub butter; and there must be no preservative other than common salt, the quantity of which must be between the limits of 2½ and 3½ percent at the time of packing. The entire process of manufacture, packing, etc., must meet the requirements of the Dairy Division inspectors, who have authority to reject any product that is not up to standard.

Navy butter in 1912 was all packed in 5-pound tins, which are lacquered both inside and outside and hermetically sealed. This butter was produced in five different creameries located in three states—California, Minnesota and Pennsylvania.

The government inspectors took a sample daily at each creamery, and these samples were placed in storage at a temperature of zero or below. In order to test the keeping qualities of the butter the samples were taken out and scored when from 7 to 10 months old. The scoring was done by three experts, independently, and the average scores ranged from 91 to 92½, the butter thus being in the grade known as "extras." The experts all agreed that is was a fine lot of storage butter, well made and very uniform.

The scientists of the Dairy Division have for several years been conducting experiments in making butter from pasteurized sweet cream as compared with that made from ripened or sour cream, and the results have demonstrated that butter made from sweet, pasteurized, clean-flavored cream is superior in quality and will keep longer in storage than butter made in the ordinary way.

HOLSTEIN-FRIESIAN PRIZES

The Holstein-Friesian Association of America has just announced its schedule of prizes for the fairs of 1913. These offerings, in addition to giving liberal prizes for exhibition of cattle, include prizes for dairy butter and for cheese made from milk of registered Holstein-Friesian herds, and for exhibits of milk and cream. The offerings for eastern fairs include:

New York: State Fair, Syracuse.—15 percent cash to each premium won by Holsteins, silver cup to each breed winner on butter, cheese, milk or cream. Delaware County Fair.—50 percent cash added in butter test to prizes won by the breed. Ogdensburg Fair and Horse Show.—Silver cups to breed winners on young herd and first prize dairy herd. Richfield Springs Fair.—Silver cup for breeder's young herd.

New Jersey—Inter-State Fair.—12 percent cash to class 3 premiums. Monmouth County Fair.—Silver Cup for best herd registered Holsteins.

Delaware—State Fair.—Silver cup for best breeders' young herd.

Maryland—State Fair.—Silver cup for best registered herd. Great Frederick Fair.—Silver cup for best registered herd. Great Hagerstown Fair.—Silver cup for best registered herd.

Complete classification and full particulars will be sent upon request to Sec. F. L. Houghton, Brattleboro, Vt.

CASEINE IN BUTTER

Please explain about caseine in butter. How much butter should 100 lbs. of butter-fat make? Have understood the law allows an overrun of 16 percent. Does this 16 percent include the caseine? Our creamery man says the caseine is an extra over-run.—Subscriber.

In churning the cream the globules of butter-fat are broken up and gathered into a mass known as butter. This butter contains not only butter-fat, but a certain amount of caseine, or the albuminous part of the milk which is part of the cream, also some added salt and water, or moisture. It would be impossible to separate all the moisture from the butter-fat in churning, even if one wished to do so. Moisture is a part of the butter itself, so, also, is caseine, and it is impossible to separate all of the caseine from the butter. When butter is churned at a certain temperature, it will absorb more of the moisture than it does at other temperatures, so that the moisture varies.

The caseine is rather a fixed ingredient and, of course, the salt being added is also variable, but there is usually, on the average, about 4 percent of salt and caseine in good commercial butter. The limit of moisture in butter has been fixed at 16 percent. If butter contains 16 percent or more of moisture it is classed as adulterated butter, so that the butter maker must see that the water content or the moisture content of his butter does not reach 16 percent, hence the 16 percent is the moisture limit and not the over-run limit. Butter can contain about 20 per cent over-run and yet have the moisture content within the limit.

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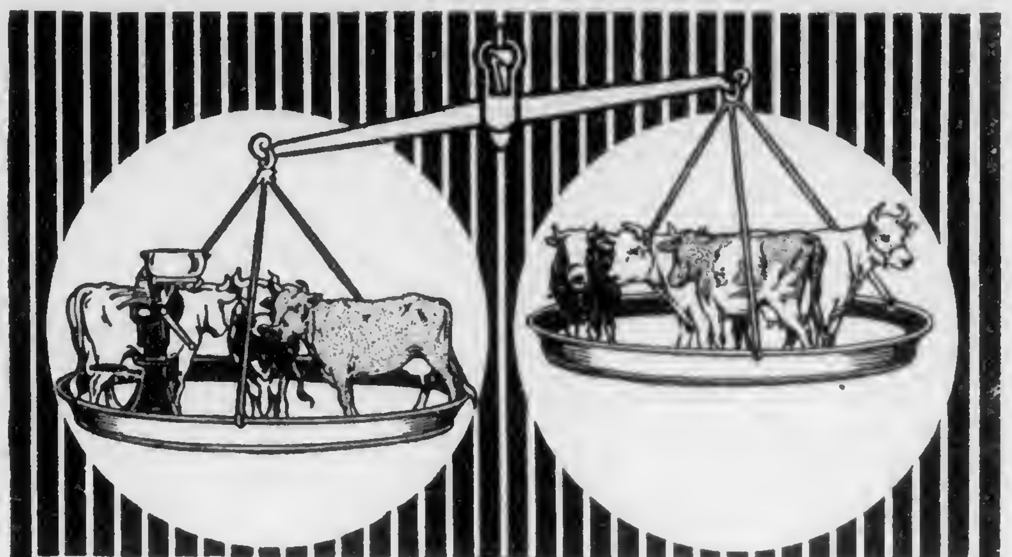

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Entered as second-class matter at the postoffice at Philadelphia, Penna.

The Lawrence Publishing Co., Proprietors
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214-216-218 South 12th St., Philadelphia, Pa.

Branch Offices For Advertising Only
Cleveland, O., 1011-1015 Oregon Ave.
New York City, 41 Park Row.
Chicago, Ill., 600 First Nat'l Bank Building
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One Year	52	copies to one person	$0.50
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Five Years	260	" " " "	$2.00

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Philadelphia, Pa., April 26, 1913.

APPLE OVER-PRODUCTION

As a result of the enormous apple planting which has been done during recent years in this country, the alarm of over-production has been sounded. Is the apple situation really serious, or is this fear merely the result of a panicy feeling among the prospective fruit growers? We have endeavored to learn this from the most prominent fruit growers of the state, asking them for their opinion, and learning how many of these men have the courage of their convictions and are planting new apples. It will be noticed from these published articles that all are more or less optimistic and many are continuing to set new orchards. This certainly gives some assurance to the man who wants to set apple trees, but when we investigate the situation we learn that there must be certain qualifications made to the statement that there will not be an over-production. The word over-production must be taken in its broader sense, for in a limited way there is an over-supply of apples every year on some markets. In other words, during a given season, some markets will have an under-supply and some an over-supply. Therefore, does it not seem that distribution is wholly or in part at fault rather than any surplus production? In this issue there will be noticed an article explaining a wide-spread advertising campaign which is now being made in the effort to educate the people to eat more apples and thus greatly increase consumption. This is a great work and if properly handled can be made of enormous benefit to everyone interested in the apple business, producer, dealer and consumer. But if this plan fulfills all expectations, will it do away with the fear of over-production? If apples of good quality are to be consumed by the mass of people it means that they must be sold at a very greatly reduced price, since present prices of fancy apples are prohibitive to all except the rich. This, in turn, means that the grower must sell them at a much lower figure, and hence must conduct his orchards on a very much more economical basis than that on which the majority of orchards are now managed. When this point is reached, when the orchardist is satisfied to receive a smaller margin of profit on the output of an intensively and economically managed orchard, the consumption increased and the distribution equalized, then the fruit business will be on a solid and permanent basis, free from the snares of the promoters and offering a safe and sound investment. We have heard or no better scheme for increasing consumption than the one outlined on another page of this issue, and believe it to be a plausible way to relieve the present difficulty.

STATE FAIR BILL

Two hearings have been held by the house appropriation committee on the state fair bill now before the state legislature. Members of the committee are reported to be considerably divided as to sentiment, and all friends of the measure should act at once if the bill is to go thru in this session. The bill provides for an appropriation of $500,000 for the purchase of a site, erection of buildings and holding of the first exhibitions. It provides for the administration of the fair by a board selected by the governor. The appropriation is an extremely modest one in view of the amounts which other states of less agricultural importance have put into similar institutions. Ohio and New York have invested millions in state fair grounds and equipment, and have found the investment so profitable that they are adding to it from time to time. The result is that these two neighboring states are annually placing their agricultural products on exhibit in expositions which draw attention and attendance from all parts of the country. They are preaching the gospel of Ohio and New York agriculture in a way that draws investors and fosters development. They are demonstrating their agricultural possibilities to the entire country, but better still they are demonstrating them at home, and they are holding home capital and developing home industries. Pennsylvania needs the fair to demonstrate to her own people what she can do in an agricultural way. The good state fair provides means for just such demonstration. It should be the meeting ground of the best in the various lines of farming, and the round-up of the winners of the various county and smaller fairs. In this way, it not only gives a means of comparison of the best from different sections of the state, but with the best from other states. It has been the history of every great state fair that it unifies and adds interest to the county fairs of the state, and it improves the smaller fairs by educating in and popularizing the best aims and purposes of agricultural shows. There is an opportunity to put this movement on foot with the passage of this bill. It should have the support to every public-spirited and progressive farmer of the state.

PURE FOOD DECISION

The United States Supreme Court recently declared a Wisconsin food law invalid because it conflicted with the federal food law governing interstate shipments of food. The decision deals more specifically with labels on packages, and there is some question as to its application to laws affecting the contents of packages. In either case it will have a far-reaching effect in influencing state legislation on this matter. For several years there has been a united effort on the part of those who have in charge the enforcement of food laws in the various states to secure a uniformity of law which will insure mutual protection. Frequently violations of the laws of one state have been found, and prosecution has been checked because the offenders lived in some other state and were thus subject to different laws. Unless these persons were violating a federal law as well as a state law, they could successfully evade prosecution. Uniformity of all state laws was the remedy, and the provisions of the federal law were obviously the best basis upon which to unite. The recent court decision, if it is found to apply to the composition of a food as well as to the label on the package, will go far to force such uniformity, and to that extent should prove a generally beneficial ruling. It will, at the same time, however, limit states to such provisions as have been made a part of the federal law, and will in many cases defeat needed or meritorious state legislation. Its effect in this direction promises to be felt in this state at once. Three important food bills are before the state legislature at the present time, and were in position for early consideration when the court's decision was made public. They will now be delayed at least until the full application of that decision can be determined. If it is found to apply to the contents of a food package, it will interfere with the passage of Senate Bill No. 5, which provides for the complete prohibition of benzoate of soda as a food preservative. As the federal law does not now prohibit the use of this drug, it appears improbable that a state will be permitted to legislate against it. The state legislature has deferred action at least until its rights in the case can be fully established. If it is found that the decision ties the hands of the legislators in this particular, it will defeat a worthy measure. There is a general and well founded objection to the use of benzoate, regardless of the position taken on it by the federal authorities. While the drug is odorless and tasteless and has been declared to be harmless in the quantities used in commercial canning, it is nevertheless a dangerous drug for common use. The greatest objection to it, however, is that it is an effective preservative, and its use enables canners to put up material of such low grade that it would not remain even apparently wholesome without the use of the benzoate. In this way the public's interest is not so much in the danger of the effects of the drug itself as in the effect of the low-grade fruit, vegetables, etc., which are made available for canning by the use of benzoate. The bills before the legislature were taking an advanced step in food regulation, and it is to be hoped that they will not be checked by the recent decision.

FARM MARKETING

We hope that our readers are carefully following the discussion of distribution of food products by Dr. King, now being published in these columns. The doctor is giving us a lot of things to think about, and farmers ought to be active in their own interests while these problems are being worked out. The present wasteful method of getting food products from the farms to the city consumers is a matter of national concern. It is one of the biggest and most serious economic wastes of the century. Dr. King has presented details in the city side of the question to show the seriousness of present waste in its direct relation to the prosperity of the laboring classes, the great bulk of consumers, and thru this, its indirect relation to the prosperity of the cities. It can not be conceived that this condition will be permitted to exist indefinitely. Cities must take the matter up sooner or later, as the industrial and commercial welfare of municipalities is becoming more and more dependent upon the improvement must come in a large degree in living costs, which hinge directly on the food problem. It is not to be expected that far-reaching reforms will come at once. Changes will come slowly as they have in the past, and everything points to the final solution in the consolidation of interests which is already taking place, under such municipal or governmental regulation as is found necessary as systems develop. And the matter of greatest concern to farmers occurs right in this consolidation. As is pointed out in the article in this issue, centralization of interests in the cities will have in view first the reduction of profits to producers as far as possible. Remedial effort coming from the country would have as its first purpose the protection of the producers and reduction of wastes in the city end. This is the problem for farmers to consider now. Public interest is being aroused on the entire question of marketing farm products. Steps are already being taken to eliminate wastes in present methods, and, following the example of the older European countries, these steps are largely along the line of organization and co-operation. This remedy is open to country and city alike,with comparative profits to each dependent upon the extent and thoroughness of such organizations. There are few country problems that can not be solved by country people, and fewer still that country people will not find it to their advantage to solve for themselves. The market problem, so far as it affects the farmer directly, should be solved by the farmers. Dr. King is helping point out the way which, as in Denmark, Holland, Germany and other European countries, is the co-operative way.

CROP CLUBS

The community crop club idea is rapidly gaining ground in the Middle West. At present farmers in Illinois are organizing alfalfa clubs and are going about a systematic community effort to establish this crop and study the way to its successful production. The plan of organization is simple and of less importance than the work taken up. Where there are granges or similar organizations already in existence, the promotion of special crops is made a feature of such organizations' work. Where no organization exists, the farmers of the community simply unite under such rules as will secure combination of effort and mutual assistance in the various problems presented. The movement is reported as spreading as club members learn of the profitable results that may be secured in such work. The experience of many bearing on the same subject helps to establish the most practical and profitable handling of the crop in question for local conditions. Better and cheaper seed is available because of increased quantities handled. Later each community will be in better position to produce its own acclimated seed, and have direct supervision over its growth, cleaning etc., with obvious advantages to all. The various methods advocated in other sections can be tested out on small areas, and local requirement established in a season's, or at most, a few seasons' work. But in addition to these, the club members are learning that this work is the foundation of broader and more important community effort. Working together on a single problem, neighbors are becoming better acquainted with the needs and abilities of neighbors, and the value of team work is more generally appreciated. In other words, this community effort is the basis of practical co-operation and it gives just the training and point of view which is necessary to successful co-operation in larger things. The club idea should be extended. Every farm community can profit by such work.

PENNSYLVANIA LEGISLATIVE NEWS

Important Legislation Delayed.—It is rather a remarkable circumstance that the present legislature, elected when political interest ran higher in Pennsylvania than at any time in two decades, is so far behind in the work it was sent here to do that no date of adjournment can be safely predicted. At this time in 1903, 1905 and 1909 the legislatures were things of the past. The session of 1907 closed on May 15 and that of 1911, which gave the school code, soft coal code, main highway act and many other pieces of constructive legislation, was over on May 25. Yet the present session has a program to which all political parties are committed by platforms and is still unable to see its date of final adjournment. The house is working like mad on unprecedented calendars, largely on a mass of legislation which in any other session would never have been heard of except on the day it was presented. The upper branch is disposing of only such bills as its members see fit, without having enacted into law one of the general far-reaching, so-called remedial bills. To the credit of the house it has cleared up most of the important bills except the public service commission and some of the taxation and election reform bills. The child labor, employers' liability and other bills have been sent to the senate, which is taking its own time, even on such a general subject as woman suffrage. It is not to the credit of the house that its committees have showered upon its calendar so many measures of doubtful value and allowed local considerations to govern in reporting out and passing of bills, and neither is it worthy of the traditions of the house that appropriation bills, which in former sessions were passed at this time, are not even started out of committee except in less than 50 cases. The two houses are manifesting antipathy toward each other's attitude and the whole situation is one of disappointment that progress has not been made. From a standpoint of cost in expenses and printing, this has been a most expensive session, and thus far the results, even after bills were prepared by well provided commissions, have been small indeed.

Agricultural Education.—Practically all of the bills designed to further agricultural education, providing expert advice, and in general agricultural subjects discussed in this letter from time to time have gone thru the house. The bill to regulate commission merchants is still in committee. Agricultural education appears to have struck a snag in the senate, largely because no one has been able to figure out what it would cost. Estimates were that it would require $250,000, together with the vocational and other schools, but no one is sure, and the indications are that there will be little doing for some time. An effort to ascertain how many districts would desire state aid to establish these courses should undoubtedly have been made long ago.

Senate Bills.—The senate has lately received several measures of general agricultural importance. One directs State College to set aside a 10-acre farm and raise crops native to Pennsylvania for experimental purposes. An appropriation of $5,000 is carried. Another bill would appropriate $100,000 to State College for employment of farm counsellors to give advice, encourage inquiries among farmers, aid agricultural education, soil study, and to attend fairs and go with demonstration trains. Another authorizes the Department of Forestry to arrange with local associations to check forest fires, and another appropriates $50,000 for the Secretary of agriculture to have state exhibits and demonstrations at county and other fairs. Still another provides for creation of district foresters to give advice to owners of woodlands, wood lots and small woods as to trees and general conditions, the idea being to encourage planting of trees on farms to conserve water supply. Another gives the state the right to take abandoned canals or railroads for highways.

Hunters' License Law.—The Davis hunters' license bill was signed by the Governor April 18, and will go into operation just as soon as county treasurers are supplied with forms, licenses and tags. The general provisions of this law are that every person between [illegible] and 21 desiring to hunt must take out a license at a cost of $1. The license is to be for one year. When he goes out to hunt he must wear the license number on his sleeve, and show license to officers or owners of land upon which he hunts. Both licenses and tags will be supplied by the county treasurer or justices of the peace. Any land owner or lessee or member of his family can hunt on his or her land without having a license. The law will not probably go into effect until late in July or August.

Bounty Law.—The license law puts into force the bounty law on such animals as foxes, wild cats, weasels and minks. This was enacted in 1907, but cost the state over $100,000, and the legislature declined to make any more appropriations, altho the law had the effect of ridding the state of many nuisances. The Davis act provides that receipts from licenses shall go to protection and propagation of game including payment of bounties on the above named pests.

Question of Funds.—The question whether funds can be specifically created by such acts as automobile license and hunters' license is in doubt. It is provided that income from licenses for automobiles, which is expected to reach $700,000 this year, shall go into a fund for road improvement. The revenue from hunters' licenses is to be similarly set apart. In 1909 there was passed the specific appropriation act, designed to head on any such endless chain schemes as allowed the Capitol to be furnished without let or hindrance. This prohibits any payments unless specifically authorized by the legislature. The question now arises must each legislature pass an act relative to each fund, so that the money can be made available, or will it be automatic.

Hodge Podge of Game Laws.—There bids fair to be confusion in the game laws of the state unless Governor Tener uses his hunting knife upon some of the stuff headed toward his desk. Over a score of bills relative to seasons and provisions for hunting have been reported out. Bills drawn to suit hunting in one locality are put in the way of affecting the whole state. One bill signed fixes the rabbit season for November 1 to December 31, inclusive. Another pending runs it to December 15. The need of care in disposing of game bills is very apparent.

Much Township Legislation.—The same confusion exists in proposed laws to regulate townships and boroughs. A flood of bills relate to townships. Four house bills would change the method of electing commissioners, three of them being different. Townships are to be given rights to pave streets, collect garbage, establish street or road lights, provide fire hydrants, rebuild bridges, furnish water, put down sidewalks and a lot of other things. Some effort has been made to codify laws relative to boroughs to secure uniformity. It has not gotten far, but it is a step in the right direction, and might be followed profitably in regard to proposed township legislation.—Hamilton, Harrisburg, Pa., April 21.

NEW JERSEY FARM NEWS

Agriculture in Education.—Several of the series of pamphlets on elementary agriculture and school gardening which have been issued by the State Department of Public Instruction, have been distributed in manuscript form in order that the schools may make use of them in their spring work. They will be put in permanent form in the fall. Suggestions for improvement of the text have been invited. Teachers have been reminded that the work is not planned "with the view of making the pupil a farmer." If a boy becomes a farmer or a girl a farmer's wife, the work will be practically useful, but if another occupation is selected it will be found that this course in agriculture will have given a most valuable training in habits that are most useful in any occupation.

Long Branch to the Fore.—The Board of Trade of Long Branch have started a contest for vegetable growing, etc., among the school children of that city. First, second and third prizes will be awarded at an exhibition to be held September 5 and 6. In addition, awards will include best kept garden of vegetables by school children, best front yard, to include artistic floral display, lawns, hedge, etc.; greatest improvement in any yard for season of 1913, showing pictures before and after, taken by school children.

State Aids Housewives.—Superintendent Waldron, of the Department of Weights and Measures has issued an interesting pamphlet entitled "What Every Housewife Should Know." The pamphlet is for the guidance of the purchasing public and contains instructions how to protect oneself against the dishonest merchant.

Demonstration Bill Becomes Law.—Governor Fielder has signed the Kays bill creating a state department of farm demonstration, and authorizing the Experiment Station Board to appoint a state superintendent of farm demonstration, and a county superintendent in each county where it seems necessary. The purpose of this act is to provide field instruction to farmers on their own farms. It is planned to select certain farms whereon the demonstration work shall be conducted as a school for all the farmers in that section.

Demonstrate Fertilizer Values.—Fifteen farms in the northern half of the state have been selected for demonstration of the value of commercial fertilizers on grass by the department of agricultural extension. The application to be used consists of 100 pounds nitrate of soda, 150 pounds acid phosphate and 25 pounds muriate of potash per acre.

To Improve Huckleberries.—An interesting horticultural experiment in improving huckleberries is being conducted in South Jersey. It is planned to select wild plants now growing largest berries and cross them to make standard varieties of large size. So important does the national bureau of plant industry consider this experiment that Professor Coville has been assigned to co-operate and keep the department in touch with results.

To Revive Chrysanthemum Show.—The Asbury Park chrysanthemum show will be revived next fall by the Elberon Horticultural Society. The dates are set for October 27 to 29. In 1911, when the show was first held, it was a success, there being more than 3,500 paid admissions during the two days' exhibiting.

Blighted Chestnut Timber.—State Forester Gaskill asserts that there need be no discrimination against blight-killed timber by users of chestnut wood in any of its forms. Where heavy fillings are necessitated, the planting of evergreens in place of the removed chestnuts is recommended.—D. T. H.

NEW YORK FARM NEWS

Constitutional Convention.—It looks as if New York would take up the matter of revising its state constitution in a year or so. A bill has passed the assembly and will undoubtedly pass the senate which provides for the holding of a special election in June, when the voters of the state will be called upon to pass judgment on the question of revising the constitution.

Holstein Breeders.—The matter of erecting a building for business purposes will come up again at the next annual meeting of the Holstein-Friesian Breeders' Association. The society is in need of a reorganization of its business departments, and the new methods that it proposes to install are based on the suggestions made by the Bureau of Municipal Research which has been examining the affairs of the association. The office system needs to be as efficient as possible in view of the magnitude of the business required to be transacted every year. The income from registration and transfer fees is over $100,000 and the surplus fund now amounts to more than $125,000. It is proposed to erect a building for purposes of rental as well as to furnish permanent headquarters for the association and its officers.

Arbor Day.—The Department of Education has issued another beautiful arbor day annual which makes a book of 56 pages, and nearly every one illustrated. It is an inspiration to teachers in the preparation of an arbor day program.

Dairyman's League.—The Dairyman's League is growing rapidly. In the past six weeks 29 branches have been organized in three northern counties of the state, and thereby nearly 16,000 cows have been added to the previously large number. The league is exceptionally well managed and is deserving of the support of every dairy man who looks after his own interests by organization and co-operation.

Cole Commission Bill.—The Cole Commission Merchants' Bill is not out of the woods yet. It got through the assembly all right and is likely to pass the senate, but it will be by the skin of its teeth. It got mixed up with the committees and finally went to third reading in the senate in the absence of Senator McClelland who is fighting it, and who later had it put back in general orders. It was expected to be taken out last week but must now wait. The bill for the establishment of a bureau of supervision of co-operative associations has become a law. The bill to bond shippers of milk, butter and cheese at milk-gathering stations is having a hard time of it in the assembly and only got through the senate after a hard fight.

Various Matters.—The Court of Appeals has just handed down a decision that purveyors of skimmed milk contracted to be sold to residents of this state may be held liable to penalties prescribed by the agricultural law. There are now over 31,000 persons in the state insane hospitals of New York, whereas the capacity of these institutions is supposed to be but 26,000.—The New York Central Railroad has sold a farm of 115 acres to the State College of Forestry for experimental purposes. Perhaps railroad farming is not very profitable.—The Governor has signed a bill which appropriates $300,000 for scholarships in colleges of this state. It does not mean that so many will be issued in a year, but they will cover a series of years. Each assembly district will be entitled to five scholarships each year. It is believed that the law will be one of the worthiest that has been enacted this year.—New Yorker.

NEW PRESIDENT OF MARYLAND AGRICULTURAL COLLEGE

The board of trustees of the Maryland Agricultural College, at a meeting held April 17, elected Prof. Harry J. Patterson president of the college. Mr. Patterson is a graduate of Pennsylvania State College, and an agricultural chemist of wide reputation. He has been director of the Maryland Experiment Station for a number of years, and has made a fine record in that capacity. He is also Master of the Maryland State Grange and is held in high esteem by the farmers of the state. He is thoroly familiar with the needs as well as the possibilities of the state, and will make an efficient and capable leader. He has a big task before him in the rebuilding of the agricultural college, but he should have the hearty support and co-operation of every Maryland interest in this work.

Weather Service.—If you have a telephone you are entitled to weather bureau service. If you are not getting daily weather forecasts by 'phone, call up your central and find out why. The federal weather bureau forecasted the recent heavy floods in Ohio and gave warnings from 12 to 24 hours in advance of their occurrence. During April and May advance warnings of frost will be given out.

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Live Stock

FEED AND CARE OF HORSES

Real horsemen are born, not made. Go into the same barn, select two teams of equal merit and usefulness, give one over to the care of a real horseman, the other to the abuse of a mere teamster, and compare results. The first-named will do double the work with half the feed and keep his charges sleek, ambitious and attractive, while the latter will not only utilize more grain and hay, but ruin his horses by general mismanagement and abuse, and yet his work will be poorly executed. The animal that does the same kind of work every day, rain or shine, is easy to feed and care for, but the team that is idle one day and overworked the next presents a real problem.

A bushel of care is worth two bushels of feed, and a combination of both is essential. Regularity of feeding, with amounts of grain and its mixture measured according to actual work done, is the only successful practice. Two feeds on Sundays or idle days during the working season, one of which is a bran mash, will save trouble. Watering before feeding, noon and evening, and not for at least two hours after the meal, will prompt better digestion. Under no circumstances should a working horse have all the hay he will eat. His capacity for roughage knows no bounds, and he will do himself great injury if allowed free access to an unlimited supply. Build the hay mangers small, rather than constructing self-feeding chutes that hold enough for a week's feeding.

TAKING GOOD CARE OF THE ORPHAN.

Then, too, it makes a difference when the hay is fed. If a 1,000-pound horse is getting 10 pounds of hay per day, 3 pounds in the morning and the balance, or 7 pounds, at night, would be a good division; or the feeding of the entire amount at night would give good results. Timothy is superior to prairie or wild hay, while clover or alfalfa hay heads the list. Millet is not satisfactory. Oat and pea hay is a splendid roughage for idle horses, especially useful with corn for feeding during the winter months. If it is well cured and bright, the mixture is hard to beat. The crop should be harvested for hay just as the oat heads finish the milk stage and the peas are well blossomed. If it is possible to drill the oats and peas early in the spring, and thus ripen the grain before real warm weather, the crop can be stacked and threshed. This grain mixture, when crushed, is especially useful for feeding young stock. Alfalfa hay and corn make a splendid combination. Ten pounds of alfalfa will replace 15 pounds of ordinary hay, while corn can be safely fed with alfalfa without the use of expensive bran or oats.

A suitable ration for a 1,250-pound work horse at ordinary farm work would be: 9 lbs. of alfalfa hay; 10 lbs. of corn and 3 lbs. of oats.

The bulk of the hay should be fed at night and the heavy feed of grain at noon. In the absence of alfalfa hay, and in case oats are high priced, the following might be substituted: 12 lbs. timothy hay; 8 lbs. corn; 3 lbs. bran; 1 lb. oil meal.

With corn, oats and bran available at reasonable prices, and mixed clover and timothy hay used as a roughage, the following would be well adapted: 11 lbs. mixed hay; 4 lbs. cracked corn; 4 lbs. crushed oats; 4 lbs. wheat bran.

In case oat and pea hay is utilized, tho it is rather bulky for hard-worked animals, the mixture might be: 12 lbs. oat and pea hay; 8 lbs. corn; 6 lbs. bran.

Should corn be the scarce or expensive feed, try the following: 8 lbs. alfalfa hay; 4 lbs. distillery grains; 4 lbs. hominy meal; 3 lbs. oats; 2 lbs. bran.

Oats may be used exclusively if the price permits, 12 pounds of timothy hay and 14 pounds of oats supplying the necessary energy; however, 5 parts of oats to 1 part of bran is a safer combination. It goes without saying that the oats should be plump and of standard weight. Barley is used very often to mix with oats when prices permit, and there is little difference in the feeding value. The oats are more palatable and energizing. Corn and cob meal should never be fed to horses, while frosted silage is as deadly as a bullet.

The use of molasses as a source of carbohydrates has been resorted to with questionable usefulness. It supplies the nutrients, is palatable and conditions the animal; yet it is sticky to handle; invites flies; does not stay sweet during the warm weather, and its beneficial effect upon the kidneys is questioned.

Ready-mixed feeds should never be purchased, for one never knows their contents, and even tho the chemist may certify to their standard analyses, the horses' digestive system may not be able to utilize the constituents. Alfalfa meal or feed is more expensive and less useful than clear alfalfa; and the practice of wetting, steaming, grinding or soaking feed is a waste of time unless you are fitting for the show. Work-horses do better on regular home-grown feeds fed in the ordinary way.

As for amounts to feed no fixed standard can be laid down. The nature of the work, the kind of weather, the season of the year, as well as the conformation and age of the animal and the efficiency of his caretaker, are ruling factors that demand consideration. Common sense and judgment must be practiced in every case every day.

Clipping is a judicious procedure if the coat is long and wooly, and horses harden into spring work more easily and quickly if this winter blanket is removed. A dry, short-haired horse does not chill as easily as a long, shaggy-coated animal, dripping wet.—Prof. Frederick C. Minkler, in New Jersey Station Circular.

REMOVING WARTS

About six years ago I bought a bay colt that had a lot of warts about its mouth and eyes. On one shoulder there was a large wart just about the size and shape of a cork for a half-pint bottle. I had read some place that equal parts of sweet oil and iodine would remove warts. So I got an ounce and tried it. I was surprised at the quick results. The warts disappeared after just a few applications, and within a short time there was not a trace of them remaining.

Two years later I had a number of yearling cattle running loose in a barn with a common feeding manger. One day I noticed a great cluster of warty bunches hanging from the side of one of the heifers, just in front of her hind leg. Examination showed them to be warty growths. I got five ounces of iodine and sweet oil, equal parts, and applied it with a brush. The warts disappeared in a very short time, and there was not a mark left. At a later time I had a two-year-old heifer that developed big seed warts on her eyebrows. They grew so large that they interfered with her sight. I used the iodine and sweet oil and again the warts disappeared. I have used the mixture to take warts off my own hands, always with good results. It is the best thing I have ever used. I have frequently seen the question asked as to the best way of treating warts. So often caustic or something equally severe is advised. I am sure that iodine and sweet oil will prove surer and easier to handle.—Samuel P. Fischler, Tioga Co., Pa.

SILAGE FOR SHEEP

Corn silage makes an excellent feed for sheep in winter, provided it is fed properly and in conjunction with other feeds. Great care should be taken not to overfeed, as sheep are very particular about what they eat, and will not eat food stuffs after they have once mussed it over. In open weather, when no snow is on the ground, they will not eat nearly as much as if they can not get anything else. So it is necessary for the feeder to use his brains and not waste feed during open weather. When the sheep are kept in the barn I feed about one bushel of silage, night and morning, to a dozen sheep and put the grain ration on the silage, which is ground barley, buckwheat and Canada field peas, mixed. The buckwheat and field peas were grown together. I sowed one bushel of Canada field peas to the acre and three pecks of buckwheat. This combination made the best grain crop I grew in 1912. Besides the grain and silage ration I feed mixed clover hay at noon. I would feed all clover hay, but have not got it. What hay they don't clean up is fed to other stock, either colts or horses. Sheep and breeding ewes will do well on the above ration, but great care must be taken to keep their feed troughs clean.—Joseph E. Fischler, Tioga Co., Pa.

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Grange

This department is conducted by R. P. Kester, Lecturer of Pennsylvania State Grange. Notes, queries, comments and news of grange work are invited from readers. Obituary notes and news of purely local interest can not be used. Address all communications for this department to R. P. Kester, Grampian, Pa.

EDITOR'S NOTES AND COMMENTS

Six hundred new granges in 1913" is the slogan suggested by National Master Wilson. Let everybody take it [illegible], and remember that the things we wish for will be realized if we work hard enough. Will you and your grange and your state do your share?

Silas Wright Grange, of Canton, N. Y., claims the distinction of initiating the largest class ever admitted to a subordinate grange at one time. Seventy-eight took the third and fourth degrees at a meeting held at that place March 15. State Master W. H. Vary was in attendance.

Susquehanna Grange No. 1145, one of the largest in Clearfield County, is having a revival of interest. A good class was recently initiated at a good meeting, and other applications read. A sumptuous supper was enjoyed afterward. The grange interest is growing.

Farmers should not let their farm work and interests interfere with a continuance of their grange attendance and work during the summer. Individual work is not of so much importance that it should be allowed to interfere with organization or team work. We often hear given as an excuse for shortcomings in this line the old saying, "Self-preservation is the first law of Nature." This is true, but we have learned, or, are learning, that the preservation of society is necessary before the individual can be preserved. It is but another way of stating a very old maxim, "He that would save his life must use it." Lose it in working with and for others.

The Ohio State Grange.—The last Ohio State Grange was one of the largest and most enthusiastic ever held in the state. Nearly 1,000 were registered, besides a large number of visitors. The reports of the different committees are reported as unusually encouraging. Ohio organized more new granges during the year past than any other state in the Union. Fifty-four new granges were added to the roll, besides a large number reorganized. The whole number now in the state is [illegible], with 42,175 members.

National Grange Preparation.—New Hampshire, the banner grange state, is getting to work in earnest getting ready for the next meeting of the National Grange. They will endeavor to make it a record breaker. The recent State Grange, held at Nassau, appropriated $1,500 towards the necessary expenses. The cities of Manchester, Portsmouth, Dover and Concord are all mentioned as in the race, with Manchester in the lead. Chairman of the executive committee, C. S. [illegible], will visit these places to investigate the facilities.

Franklin Grange Discusses Roads.—[illegible]town, Pa., Franklin Grange No. [illegible] has added a few new members during the past month and is in prosperous condition. The last meeting was given to the discussion of the Road Bill, and the members did ample justice to Mr. Bigelow and the governor. The next meeting will be devoted to the discussion of woman suffrage, and promises to be fully as interesting as the last meeting.—Patron.

REAL GRANGE WORK

The following letter received from New Jersey may be interesting:

"Dear Worthy Lecturer.——We are so glad to have your Department in the Pennsylvania Farmer. That is the paper we read first of all. My husband and I, being tired of the everlasting grind of city life, moved here to the country two years ago. Our little boy, ten years of age, enjoys it as much as we do. He is a different boy. The message I want to give you is this: We joined the grange very soon after our arrival. It was the means by which we became acquainted with our neighbors. Without it, we might have become lonesome, homesick and discouraged before we could have become acquainted. Then we have received most of the knowledge about our work from the grange meetings. The program is so well conducted by the Lecturer that we receive just what we need. Our grange is taking such an active interest in the schools, the roads and other public affairs, as well as in the social life of the community, that our neighborhood will soon be, if it is not now, an ideal place to live in.

Wishing you success in your work of building up the grange, I remain, very truly yours, Mrs. A. B. S."

McSPARRAN'S GRANGE NOTES

Revision of the Tariff

A great many people, both in and out of Congress, seem to have the idea that tariff duties are laid primarily for the purpose of protection, and that prosperity is measured by the hight of the tariff wall that we put up about us; also that the farmer has been taken care of by means of a liberal duty upon the staple products of the farm. Indeed, the National Grange and many state granges have put forth the argument from time to time that the farmer should have the same measure of protection as other business has. The United States Congress has taken up the revision of the tariff, and we farmers ought to have a clear idea as to the relation of our business to this great question. The proposition for protection for the farmer equal to that granted other business sounds reasonable, but in actual practice does not work out that way. And if we are to get from the coming tariff bill any better results than we have been getting in years past, it will be because there is a definite idea among farmers as to how they want the cereal schedule and that they make that idea known to the members of Congress.

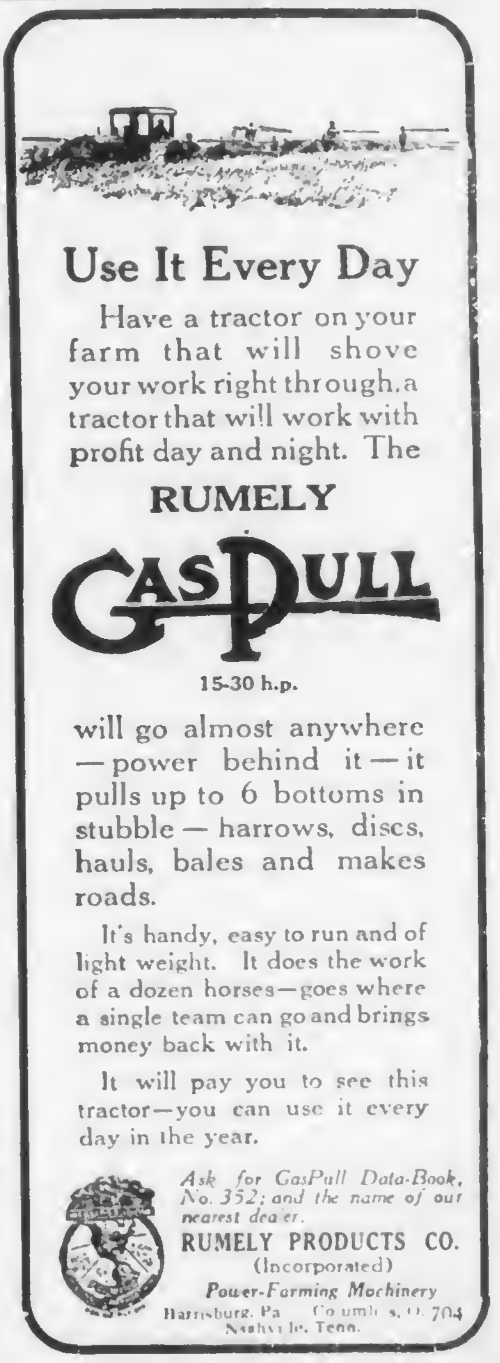
Congress has been pledged for years to a downward revision, and it seems reasonable to believe that the pledge will be fulfilled ere this extra session closes. But what do we farmers really want? Have we a definite idea of the relation our products have to this question? The facts as I see them, are these: We are exporters of food products. We have been, are and no doubt for many years to come will be, exporters of food products. Those products are perishable and so, year by year, we must sell, no matter what the price. Therefore, whatever the surplus brings upon the markets of the world, that is the price we receive for the whole crop, subject to cost of transportation and local conditions, which cause a small variation but not enough to affect materially the average price for the whole crop. If then, we must take practically the world's price for our product, we must, if we are to get fair play and an equal opportunity under the law, buy at the world's price, subject to the addition of whatever tax may be collected for the support of the government.

But that is not the actual market condition in which we purchase. So many things we need are not perishable like food products and the makers of those products, by a process of consolidation and manipulation, have brought about a condition in which they can collect from the consumer the world's price, plus nearly all of the tariff, and run their mills enough to keep the supply about equal to the demand. If all the goods the farmer, as a consumer, used were made abroad, then the tariff he paid in purchasing those commodities would go to the support of the government, and his position would be that of a taxpayer. But the great bulk of what he buys as a consumer is made in this country, and what he pays in excess of the world's price for the article he pays as a royalty to the producer of that article. In the passage of such an unjust law, the government becomes a party to the iniquity of allowing one citizen to take the property of another without giving value in return.

If the farmer made an imperishable product and was in a position to hold the output down to the level of home consumption or a little below that level, then he would be able to take advantage of any tariff duty that might be levied, and then, of course, the higher the tariff, the greater the advantage. But that is not his position, and therefore he is faced with this situation that, as a producer, he must take for his products a price that is controlled by the world's price, and as a consumer, he must buy in a market that is controlled by an artificial price, due to tariff and organization. That the condition operating against us is an arbitrary one is amply proven by the fact that in so many lines of commodities these protected industries have a price for home consumption and another and lesser one for the markets of the world. So there is now no room for the cry of "infant industry," and as to the participation of the laboring man in the benefits of these legislative privileges, we find that on the one hand as a worker he still has to compete with all kinds of cheap labor from all parts of the earth, and as a consumer he has to pay, as does the farmer, an artificial price largely in excess of the world's price.

The just solution of the tariff question seems to me to be that if we are to use tariff laws for the raising of revenue, let them be so constructed as to bring in the most revenue at the lowest cost to our people, and not arrange the schedules so that the greater part of the tax collected (as has been the case for a generation) should go into the pockets of trusts and monopolies. Wherever the effort is made to stimulate any particular business by an increased tariff over that which would properly be laid upon that commodity, the history of the workings of such a schedule is that it breeds monopoly and destroys revenue by preventing foreign competition.

Our industries have now developed so that they need the markets of the world for their surplus, if they are to keep their mills constantly in operation. We farmers have for a long time needed the world's market for our surplus, and therefore the time has come when we should develop a legislative policy that would encourage buying on the world's market as well as selling on it. We can not expect other nations to seek trade with us if we maintain a policy that expects always to sell and never to buy.—John A. McSparran.



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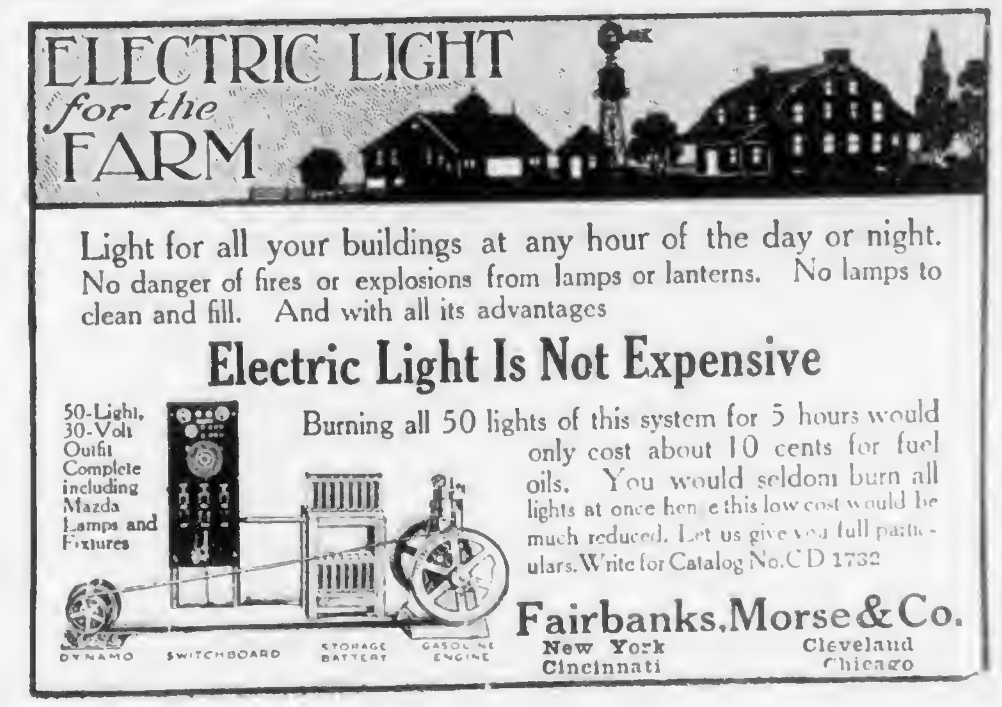

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The Distribution of Food Stuffs.---IV

By Dr. CLYDE L. KING, University of Pennsylvania.

A SHORTER ROUTE FROM PRODUCER TO CONSUMER

It follows from increased land values and labor costs that the cost of producing food stuffs is going to increase. Cheaper food can come only thru lowering distribution costs. The characteristic in present-day tendencies in food distribution is the awakened activity on the part of farmers, middlemen and retailers to shorten the route from producer to consumer, and to make their business units include all the stages of distribution.

A decade ago the wholesale commission men were united in declaring that ''business'' required that retailers buy from wholesalers, and wholesalers from farmers, and that any elimination of the middleman was destructive of all good ''business principles.'' Today farmers are organizing in co-operative associations, the middleman is sending his own motor truck out into the country to buy direct and controlling his own stores, and the retailer, typified by the chain stores, is extending his operations to include all the activities in distribution from the time it leaves the farm until it reaches the consumer's table.

Not only are chain stores saving at least 20 percent by having a salaried man do the work heretofore done on commission by a professional wholesaler, but many of the larger retail stores are buying in the same way. In Philadelphia, which is typical of other cities, 18 percent of the stores are buying directly, these representing a very large proportion of the total amount of produce sold. It is this condition that has made the wholesaler realize in the past year, not only that the amount he can dispose of is limited by the price charged by the retailer, but that his avenues for sales are growing smaller. Hence his appeal to such agencies as the Housewives' Leagues to sell goods he can no longer sell thru the old-time channels.

The significant movement of the 20th century is the tendency among all produce growers to increase their facilities for direct marketing by organizing co-operative associations. Thru co-operative associations the farmers of Denmark are now exporting more than $90,000,000 worth of butter, eggs and meats every year. The Danish Export Society did a business in 1908 of more than $6,600,000. Their regulations in sale of eggs are typical of their methods. They require each farmer to stamp his eggs with his own number and the number of the group to which he belongs, so it is possible to ascertain exactly who supplied each egg. Thru wholesale co-operative associations, Danish farmers purchased, in 1908, fertilizers, machinery, etc., to the value of $17,500,000, thereby effecting large savings.

Irish co-operative organizations have done a total business to date of $125,000,000; a turn over, in 1911 alone, of nearly $15,000,000. The Irish Agricultural Wholesale Society saves the farmers from 25 to 45 percent on fertilizers and other articles. The Hood River Apple Growers' Union of Oregon, with a paid up capital of $25,000, controls the packing, shipping and inspection of fruits, conducts its own cold storage plant and manufactures artificial ice. Since its organization it has increased the prices received by its members from 60 cents to $2 a box. In Minnesota the Dassel Co-operative Association sent out, during the year ending December 31, 1911, 180,000 dozen eggs, for which its members received nearly $50,000 in cash, or $9,000 more than they could have received under the old system. The wool growers of the northern Rocky Mountain region have established large warehouses in Chicago and Omaha to which wool is consigned, to be sold by representatives of the association. Manufacturers as well as dealers are among the buyers.

A partial list of other co-operative associations further indicates the extent to which this movement has gone. The Monmouth County Farmers' Exchange of Freehold, N. J., operates thru a territory of 50 miles; the California Fruit Growers' Exchange markets enough fruit each year to load a train of refrigerated cars 320 miles in length; the Rocky Ford Melon Growers' Association of Colorado, controls practically the entire business of the region; The New England Cranberry Sales Company, the Citrus Association of Florida, Wheat Growers' Association, Grangers' Business Associations, Market Producers' Associations, Growers' and Shippers' Exchanges, Live Stock Shippers' organizations, not only seek to shorten the route from farm to the consumer, but they are also stamping the quality and weight of their goods, so as to avoid all extra expense due to re-sorting and re-packing.

In every section and in every class of business, the route from producer to consumer is being shortened. These savings have, as yet, had slight effect on the consumers' prices because the majority of these food stuffs take the old round-about route thru the hands of many men. The hope of the future is that, thru proper activity on the part of city, state and nation, thru the co-operation of public-spirited transportation concerns, thru the organization of co-operative societies on the part of farmers and consumers, thru the increased opportunities for municipal wholesale and retail markets, thru the demand for lower prices on the part of the consumer, this shorter route may be made the standard route.

One definite municipal activity that will encourage this tendency is the establishment of municipal wholesale and retail markets. There are many so called markets in all the large cities today, but they are not markets in which the producer and consumer meet, but rather groups of professional retail dealers. Farmers do not play any appreciable part in the sale of food stuffs to Philadelphia's consumers in over 10 of the 47 wards of the city, and in these 10 wards they do not sell to over 10 percent of the people. This style of market has been rapidly declining in all eastern cities in the last 10 years, first, because the residence section is moving away, and hence no consumers are at hand; and, second, because the standard type of store is now the small store, where there is a quick turn over and where the stock kept from day to day is relatively small. Successful markets, therefore, should be in residence sections, and need be only large enough to give the purchaser ample choice. The housewife today does not like to seek a distant store, but when she does ''go to market'' she wants to buy of farmers, not of professional retailers.

Each city should stringently regulate existing private markets to protect both market purchasers and the bona fide farmers. For instance, in the Philadelphia markets today there is nothing to prohibit and retail dealer from taking a stall, in any private or municipal market, and represent himself as a farmer who sells his own produce. There are many men at certain markets with large signs proclaiming themselves to be ''Bucks County,'' ''Montgomery County'' or ''Lancaster County'' farmers, who have no farms and who either purchase their goods at the wharves at wholesale, or, at the best, are jobbers who buy produce from the farmers and then sell it at their retail stalls as their own produce. The bona fide farmer and the honest dealer are both put to a great disadvantage and the consumer is forced to conclude that there is no advantage to be gained by buying at the markets. City ordinances should require that none but bona fide farmers or gardeners could display signs proclaiming themselves as such, and should require adequate inspection by city inspectors with heavy penalties for violation.

The city might also undertake to do what the state of Wisconsin now proposes to do—assist farmers to secure the names of bona fide residents who wish to buy directly. The farmers could thus use the hamper method made so famous by Mr. Fullerton, of Long Island (illustrated on the first page of this paper), or other means of direct shipment. The Growers' and Shippers Exchange of Rochester, N. Y., has been highly successful in standardizing retail prices on farm products by using a package small enough to pass thru grocers' or dealers' hands, and to be bought directly by the consumer himself.

The Pittsburgh council has under consideration an ordinace providing for a wharf terminal. The passage of the bill awaits an enabling act, now before the house at Harrisburg, where it is meeting the opposition of certain ''interests.'' The Pittsburgh plan is to allow the city to build a water terminal and grant to the trolley lines franchises for the operation of freight cars in such way that farmers' produce can be brought to a given center and disposed of at a definite advantage. Philadelphia is now planning to extend market facilities to farmers and to increase municipal activities with reference to the sale of food products within the city. The Director of the Department of Public Works is endeavoring to further these ends.

These are steps that can be made to eliminate unnecessary handling and to get a more direct route from producer to consumer. That movement will certainly characterize food distribution in the future. The only question will be whether this movement will be undertaken by organizations wholly within the cities, and thus tend to keep prices to farmers lower, or whether it will be done by farmer's co-operative societies, and thus tend to increase the farmer's aggregate receipts. A shorter route ought to mean higher prices to farmers, but it will not necessarily mean lower prices to consumers unless accompanied by certain activities on the part of both private and governmental activities.

To secure lower prices to consumers certain governmental activities are essential. Every city and state should have a stringent weights and measures ordinance and laws, with adequate means for enforcement. State and national laws do much now to prevent misbranding and adulteration, altho there is still opportunity for improvement. While the national law prevents misbranding as to the contents or weight in a food package, it is still possible to put either a 50-cent or a 15-cent label on exactly the same can of, say, baking powder. There are also laws preventing monopolistic agreements, but there are, as yet, no adequate means for the dissolution of local retail trusts and for annulment of improper price agreements. Cold storage laws that encourage conservation of food stuffs are also essential. The time limit on these, however, should not, as in the proposed law in Pennsylvania, be so short as to deny to the farmer opportunity to hold his goods for the proper length of time, and to the consumer opportunity to buy in cold storage during seasons of slight or no production. The work of the food inspection departments of city, state and nation should include constructive work, and not only the legal, negative police work of attempting to abolish evils. The consumer must be taught the significance and value of certain foods, to the end that every housewife may be a well-informed food inspector.

And, finally, to prevent abuses by retailers, there is needed an organization of consumers, such as the Housewives' League, to give publicity to current abuses. The Housewives' League of Philadelphia and other cities has done yeoman service. A permanent organization with a duty in the food world akin to the duty of the Voters' League in the political world, could, thru publicity, prevent prices from being boosted to unreasonable heights, and prevent under-hand practices of all kinds for which the consumer must ultimately pay.

The jobber and the commission merchant will always play a part in the national distribution of food products. But their activities are not so essential for selling in the city the produce raised in the outlying country. The possibility of reducing the costs of food distribution lies primarily in increasing facilities for selling at home. The shorter route between producer and consumer will then become the standard one for fixing consumers' prices. To further this movement, emphasis must also be placed upon certain local agencies for transportation. These will be discussed in the succeeding and final article of this series.

NATIONAL CONFERENCE ON MARKETING

The first national conference on marketing and farm credits was held in Chicago, April 8-10. Two days were devoted to discussing problems of marketing and distributing farm products and one day to farm credits. Four hundred and fifteen delegates to the convention registered, representing [illegible] states and 4 provinces of Canada.

Editors of agricultural papers, bankers, college professors, farmers, commission men, Congressmen, state legislators and the professional crank with an ax to grind made up the audience. As was to be expected, the discussions represented many different points of view. It was unanimously agreed that present methods of marketing and distributing farm products are wasteful and the road between producer and consumer is too long and circuitous.

Some of the suggestions for improving conditions were the co-operation of consumers in the city for buying; the provision of better and more prompt shipping facilities by the railroads, and better market roads in the country.

The conference adopted resolutions on farm finance urging a reform in our general currency system and asking that provision be made for ''the wide circulation of the notes and papers of farmers, merchants, manufacturers and business men generally thru proper discount and rediscount systems.'' Also that state and federal legislation be provided for the organization and supervision of co-operative credit and land mortgage banking associations to provide short and long-time loans.

The establishment of a bureau of markets in the United States Department of Agriculture by the last Congress was heartily commended by the conference. Agricultural colleges were asked to give more attention to the teaching of the business side of farming and to establish bureaus of exchange as a medium of bringing buyers and sellers together.

It was voted to hold another conference at Chicago in April, 1914.

Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., April 21, 1913.

All good grades of butter were sold and the market continued firm at about steady prices. There was a good demand for fresh eggs, which ruled firm and were well sold up. Live poultry was steady under moderate offerings. Trading in vegetables was quiet, altho prices remained about steady.

Butter.—Western creamery, 39c; extras, 37c; firsts to seconds, 34@36c; special prints, [illegible]; near-by prints, 40c.

Cheese.—New York full cream, 16½@16¾c; skims, 8¾@11c, according to quality.

Eggs.—Candled, 21@23c doz.; extras, 20[illegible]. Current receipts at $5.55 per standard case.

Poultry.—Fowls, 17½@18½c; old roosters, 12@12½c; spring chickens, 30@36c; ducks, 17@18c; pigeons, 32@36c pair.

Dressed Poultry.—Western fowls, 18@19½c; roosters, 15c; chickens, 18@19c; turkeys, 20@25c.

Vegetables.—White potatoes, choice, 70@72c bu. Onions, 50@75c bag. Cabbage, $11.00@13.00 ton. Lettuce, $1.00@2.00 basket. Cucumbers, $2.00@3.50 basket. Celery, 25@60c bch. Spinach, 80c@$1.25 bbl. Kale, 25@50c bbl. Egg plant, $1.75@2.25 box. String beans, $1.50@3.00 bu. Peas, $1.25@1.50 basket. Peppers, $2.50@3.50 carrier. Tomatoes, $2.00@3.50 carrier. Watercress, $1.50@2.00 100 bchs. Asparagus, 20@35c bch.

Fruit.—Apples, choice varieties, 25@75c hamper, $2.00@3.50 bbl. Cranberries, $1.25@2.00 crate. Strawberries, 12@22c qt.

Hay and Grain.—No. 1 timothy, new, $17.50@18.00; No. 2, $15.00@16.00; No. 3 do., $12.00@13.00. No grade, $8.00@10.00. Clover mixed, No. 1, $13.50@14.00; No. 2 do., $11.00@12.00. No. 1 tangled rye straw, $13.50@14.00; No. 1 wheat straw, $10.00@10.50; No. 1 oat straw, $10.50@11.00. New second corn, No. 2 yellow, 61½@62c; No. 3 yellow, 59½@60c. No. 2 red wheat, $1.01½@1.02½; No. 3 do., 96½@97½c. No. 2 white oats, 42@42½c. Standard white, 41@42c; No. 3 white, 40½@41c.

Hides and Skins.—Steers, abattoir, 15¼@16¼c; do country, 13¾@14¼c. Cows, abattoir, 14¾@15¼c; do. country, 12½c. Bulls, abattoir, 12¼@12¾c; do. country, 11½c. Calf skins, Nos. 5 to 12 and up, $1.35@2.45; do. green, 13@14c lb.

Seeds.—Timothy, $3.15@3.25 bu.; clover, white, $25; do. crimson, $6.25; do. mammoth, $14.50; do. sweet, $13.00; do. alsike, $13.25; red top, per bu., $13.50; alfalfa, $7.00@10.00; Canada field peas, $2.35; vetch, $8.50; rye, winter, $1.37; spring, $2.25; soy beans, $3.25; barley, $2.50; buckwheat, $1.50; cowpeas, $3.00@3.25; millet, $1.90@2.75; oats, $1.25.

Coffee.—Rio, 7s, 11¼c; Santos, 4s, 13c. Mild Coffee.—Cordova, 14½@17½c.

Provisions.—City beef, smoked and air dried, 22@23c. Beef hams, 31@33c. Pork, family, $21.00@22.00 bbl. Hams, cured, 14½@15½c; skinned, 14¾@15¾c; smoked, 17@18c. Other hams, smoked, city cured as to brand, 16@18c. Picnic shoulders, 10@10¾c; do. smoked, 12@12½c. Bellies in pickle, 15@16c. Breakfast bacon, as to quality, 17@22c. Lard, refined, 11¾@12½c; do. in tubs, 11½@12c; do. kettle rendered, 11¾@12c. Tallow, prime city, 6¾@7c; do. country, 7⅛c; do. dark, 5⅞c; do. cakes, 7⅜c.

Sugar.—Cut loaf, $5.15 cwt.; cubes, $4.60; powdered, $4.45; granulated, $4.35; standard granulated, $4.40; crystal A, $4.35.

Flour.—For 196 lbs., in wood, winter clear, new, $4.00@4.25; do. straight, new, $4.40@4.60; favorite brands, $4.85@5.25. Rye flour, Penna., $3.25@3.50.

BALTIMORE PRODUCE

Baltimore, Md., April 21, 1913.

The butter market was stronger on all creamery grades under a light supply. Strictly fresh eggs continued firm thruout the week with a continued good demand for choice stock. Live poultry was in good demand and good grades are wanted at satisfactory prices. Fruits and vegetables were about as last week with normal trading.

Butter.—Creamery, fancy, 36c; do., choice, 34@35c; prints and blocks, 33@36c; Maryland and Penna. rolls, 22@24c; prints, 21@22c. Process 29@31c.

Cheese.—Flat, 17½c; Daisy, 18@18½c.

Eggs.—Md. and Penna., firsts, 18c; western, 18c; southern, 17c.

Live Poultry.—Hens, 17c; chickens, 22@25c; old roosters, 11c. Turkeys, 24@25c. Ducks, 16@20c. Geese, 14@15c. Guinea fowls, 20@30c.

Dressed Poultry.—Turkeys, 24@25c; chickens, 20@21c; roosters, 11@12c; ducks, 20@22c; geese, 11@17c.

Vegetables.—Potatoes, white, 50@55c bu. Sweets, $2.50@3.00 bbl. Cabbage, $1.50@1.75 bbl. Danish, $6.00@8.00. Onions 25@30c bushel. Lettuce, 20@25c bushel. Egg plant, $2.00@2.25 crate. Peppers, $1.50@2.00 crate. Squash, $1.25@1.50 basket. Spinach 25@30c box. Cucumbers, $3.00@3.50 basket. Beans, green, $2.00@2.50 basket. Celery, $1.75@3.00 crate. Turnips, 10@15c box. Cauliflower, $2.50@2.75 bbl. Horseradish, $1.25@1.50 box. Beets, 2@3c. Asparagus, 15@20c bunch.

Fruit.—Apples, new, $2.00@3.50 bbl.; 50c@$1.00 bu. Strawberries, 10@20c qt.

Grain.—Wheat.—No. 2 red western, $1.10¼; spot, $1.10¼. Corn, spot, 58⅝c; contract, 58⅝c. Oats, No. 2 white, [illegible]; standard white, 41½c; No. 3 white, 39¼@39¾c. Rye, 55@65c.

Hay and Straw.—No. 1 timothy, $17.00@17.50. No. 2 timothy, $16.00. No 3 do., $12.50@14.00. Choice mixed, $15.00@17.50. No 1 clover, $11.50@12.00. No. 2 do., $9.00@10.00. No. 1 tangled rye straw, $11.00@12.00. No. 1 oat straw, $9.00@[illegible]. No. 1 wheat straw, $8.00.

Millfeed.—Spring bran, $22.00@22.50; Middlings, flour to white, $26.00@28.00; western middlings, $23.00@23.50; city mills mids., $24.00@24.50.

BUFFALO PRODUCE

Buffalo, N. Y., April 21, 1913.

Butter.—Steady. Creamery, choice, 36c; choice dairy, 33@34c.

Cheese.—Slow. Fancy, 17½@18c; good 16@16¼c.

Eggs.—Firm. State fresh, 19@20c; western, 18@19c.

Dressed Poultry.—Active. Turkeys, per lb., 23@26c; fowls, fancy, 17@20c; chickens, 16@20c; old roosters, 14@15c; ducks, 21@24c; geese, 17@18c.

Live Poultry.—Firm. Chickens, 20@21c; ducks, 21@22c; geese, 15@17c; turkeys, 22@23c; old roosters, 13@14c.

Vegetables.—Potatoes, slow. Home-grown, 58@60c bu. Cabbage, $1.40@1.60 crate. Onions, 25@50c sack. Beans, green, $2.75@4.00 hamp. Turnips, 75@80c bbl. Celery, 50@75c doz. Lettuce, 40@70c.

Beans.—Quiet, steady. Marrow, fancy, $3.40@3.50; medium, $2.40@2.50; red kidneys, $2.00@2.30.

Fruits.—Apples, $2.25@3.25 bbl.; 50@75c bu.

Honey.—Firm, No. 1 fancy, 17@18c; No 2 new, 13@15c; dark, 12c.

Hay.—Firm. Timothy, choice, on track, $17.50; No. 2 do., $16.00; No. 3, $15.00; light mixed, No. 1, $13.00@14.00; rye straw, $10.00; oat and wheat straw, $8.00@9.00.

Feed.—Weak. Spring bran, $19.50 ton. Standard mids, $19.75. Corn meal, $24.50. Gluten, $24.00. Hominy, $23.50. Oilmeal, $27.50. Cottonseed meal, $31.50.

YORK PRODUCE MARKET

York, Pa., April 21, 1913.

Quotations for the week were unchanged. Buying was normal. Hot-bed produce is increasing in quantity and demands fair prices.

Butter.—Country, 33@36c; separator, 33@35c. Milk, 6c per qt.

Eggs.—17@18c doz.

Poultry.—Hens, 15c lb. Dressed poultry, 45@90c each.

Vegetables.—Potatoes, 8@10c half peck; 50@60c bu.; cabbage, 2@6c each; lettuce, 5@10c; beets, 3@5c bunch; radishes, 2@5c; turnips, 10c per ½ peck; onions, 2@5c bch; lima beans, 10@14c qt.; soup beans, 8@10c qt.; sweet potatoes 12@15c per half peck; parsnips, 10c per half peck; sauer kraut, 5@8c qt.; lard, 14@16c lb.; celery, 3@7c; rhubarb, 3@5c bunch; asparagus, 5@10c bunch.

Fruit.—Apples, 10@25c a half peck; strawberries, 15@20c box.

Retail Grain Market.—Wheat, $1.12; corn, 68c; oats, 48c; bran, $1.20 a cwt.; rye, 78c; middlings, $1.40 a cwt.

Wholesale Grain Market.—Wheat, $1.02; corn, 55c; oats, 37c; rye, 68c.

WASHINGTON PRODUCE

Washington, D. C., April 21, 1913.

Eggs.—Near-by, fresh, per dozen, 18c; southern, per doz., 18c.

Cheese.—New York, new, per pound, 16½c; flat, 16½c.

Butter.—Best prints, per pound, 37c; tub, 36c; process, 30@31c; undergrades, 25c.

Live Poultry.—Hens, per lb., 18c; roosters, 10c; springers, 30@35c; turkeys, 18@22c; geese, live, 10@12c; ducks, 16@17c.

Vegetables.—Potatoes, bbl., $1.25@1.50; 50@70c bu. Onions, $1.50@2.50 per 100-lb. bag. Lettuce, per bas., $1.25@2.50. Beans, $2.25@3.50 basket. Peppers, per crate, $1.50@2.50. Egg plants, per box, $2.00@2.50. Squash, per bbl., $1.50@2.25. Beets $1.50@2.00 per 100 bchs. Mushrooms, per lb., 25@40c. Carrots, 1½@2½c bch. Cabbage, $1.50@2.50 crate. Radishes, 50c@$1 per 100. Cauliflower, $1.25@1.75 crate. Apples, $1.50@4.50 bbl.

NEW YORK PRODUCE

New York City, April 21, 1913.

All butter receipts of good grades were readily disposed of at fair prices. The market continues firm. Eggs were not as active as last week altho strictly fresh stock was sold up. Other grades are without an urgent demand. Dressed poultry is about steady under limited demand and light receipts. Fresh stock is arriving very slowly. Vegetables were about normal, except new onions which were scarce and firm.

Butter.—Creamery firsts to extras, 35½@36½c; thirds to seconds, 33@35c; factory, 21@29c; state dairy, 29@36c; packing stock, 23@26c; process, 25@32½c.

Cheese.—Whole milk, specials, 16@17¼c, do. common to fancy, 14@16½c; skims, 8@13c.

Eggs.—State and near-by, 21@23c; fresh gathered, 14@21c; mixed, 19@20c.

Dressed Poultry.—Turkeys, dry, 19@25c; chickens, Penna., 30@40c; fowls, 14@18½c; old roosters, 14@14½c; ducks, 15@20c; roasters, 19@22c.

Live Poultry.—Fowls, 18c; chickens, 18c; old roosters, 12½c.

Grain.—Easy. Wheat, No. 2 red, $1.14½; No. 1 Northern, $1.01½. Corn, 63¾c. Oats, standard white, 41c.

Vegetables.—Potatoes, state, $1.70@1.80 per 168 lb. bag. Cabbage, 75c@$1.25 crate; do. Danish, $9.00@12.00 ton. Green beans, $2.00@4.00 basket. Carrots, 50@75c bag. Cucumbers, 50c@$1.13 dozen. Lettuce, 25@50c doz. Squash, $1.50@2.00 bbl. Celery, $1.00@4.00 case. Horseradish, $1.00@3.00 cwt. Parsnips, 50c@$1.00 bbl. Turnips, 35@75c. Watercress, $1.25@2.00 per 100 bunches.

Fruit.—Apples. $1.75@4.00 bbl., according to variety. Strawberries, 5@13c qt.

WILMINGTON PRODUCE

Wilmington, Del., April 21, 1913

Trading on the markets during the week was normal and prices remained at about last week's figures. Eggs are more plentiful and the demand for chickens, both live and dressed, has somewhat declined.

Fruits.—Apples, 50@75c basket; $3.00@4.50 bbl. Strawberries, 12@20c box.

Vegetables.—Potatoes, 60@80c bu.; $1.75@2.00 bbl. Cabbage, 75c bbl.; 25c basket. Onions, 40c basket. Celery, 60@85c doz. Spinach, $1.25 bbl. Sweet potatoes, 60@75c basket; $2.50@3.50 bbl. Kale, 75c bbl. Lettuce, $2.00 basket. Asparagus, $3.50@4.00 doz.

Poultry.—Chickens, live, 16@17c; do., dressed, 20c. Ducks, 13@14c lb.; dressed, 18c.

Eggs.—19c.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., April 21, 1913.

The cattle market during the past week was steady, altho receipts are not of the highest quality.

	Beef Cattle	Sheep and Lambs	Hogs
Total for week	4,112	12,146	4,817
Previous week	3,848	11,275	4,793

Best steers	$8.75@8.90
Choice steers	8.50@8.62½
Good	8.37½@8.50
Medium steers	8.00@8.25
Common steers	7.50@7.75
Bulls	5.00@7.25
Fat cows	4.50@6.75
Thin cows	3.00@4.00
Milk cows	40.00@65.00

Veal calves are steady.

Best calves	$10.50@11.00
Good to choice do.	9.50@10.00
Medium	7.00@8.00
Common do.	6.50@7.00
Thin do.	5.00@6.00

Sheep and lambs are steady.

Extra wethers	$7.00@7.50
Choice wethers	6.50@7.00
Good wethers	6.00@6.50
Common to medium	3.00@5.50
Ewes, fat	6.00@6.50
Extra lambs	9.50@9.75
Good to choice do.	9.25@9.50
Common to medium	6.00@8.50

The hog market continued steady thruout the week at $12.75@13.00.

City Dressed Stock.—Choice classes of dressed meats are steady. Trade is normal. Steers, 13@14c; heifers, 10@13c; cows, 8@11½c. Veal calves, 14@16c; country dressed calves, 14@15c; extra do., 15½c. Sheep, 11@13c; extra wethers, 14c. Spring lambs, 16@17c. Hogs, 13@13¼c.

BALTIMORE LIVE STOCK

Baltimore, Md., April 21, 1913.

Beef receipts for the week were 1,342 head. The market is 15c lower.

Steers	$6.00@8.50
Heifers	5.00@7.50
Cows	3.00@6.75
Bulls	5.00@7.50
Fresh cows	27.50@77.50

Sheep and lamb receipts were 4,003 head. Under a fair supply the market is lower.

Sheep	$3.75@6.75
Lambs	6.75@9.45

There were 10,921 hogs on sale during the week. Under a fair supply and good demand the market is steady.

Light western	$9.75@
Heavy to medium	9.50@9.70
Near-by	9.40@9.60
Pigs	9.25@9.40
Roughs	7.50@8.50

Calf receipts for the week were 372 head. Most of the receipts were of unattractive stock, and under a light supply the market is steady at $6.00@10.50.

PITTSBURGH LIVE STOCK

Pittsburgh, Pa., April 21, 1913.

The cattle market ruled slow last week at a general decline of 25 cents per cwt. The bulk of offerings was of medium weight grades and they sold at the greatest decline. Best fresh cows are steady; others slow and lower. There were 80 loads on sale today. The demand was moderate and the market ruled slow and 10 to 15 cents lower.

Good to choice	$8.70@8.80
Good, 1300 to 1400 lb.	8.50@8.70
Medium to good, 1200-1300 lb.	8.25@8.40
Tidy, 1050-1150 lb.	8.10@8.25
Fair to medium, 900-1100 lb.	7.75@8.00
Common to good fat oxen	5.00@7.00
Common, 700-900 lb.	6.00@7.25
Common to good fat bulls	5.00@8.00
Common to good fat cows	4.75@7.25
Heifers, 700 to 900 lbs.	5.50@8.00
Bologna cows	4.00@4.40
Fresh cows and springers	20.00@80.00

Veal calves are 50 cents per cwt. lower. Today's receipts were 900 head. Choice grades were strong; others steady.

Heavy and thin calves	$4.50@6.00
Veal calves	7.00@9.50

Receipts were liberal all last week and the market was slow, with a decline of 35 cents per cwt. Today's receipts were 40 double-deck loads. Market ruled 5 cents lower than on Saturday.

Prime heavy	$9.25@
Prime medium weights	9.45@
Heavy mixed	9.35@
Best heavy Yorkers	9.45@
Light Yorkers	9.50@
Pigs as to quality	9.40@9.50
Common to good roughs	8.00@8.50
Stags	7.00@7.50

Sheep and lambs have been in liberal supply and lower. Today's receipts were 3 double-deck loads. With a good demand the market ruled steady on sheep and higher on choice lambs. Other grades were slow and barely steady. Spring lambs are lower.

Prime wethers, clipped	$6.20@6.35
Good mixed	5.85@6.10
Fair mixed ewes and wethers	5.10@5.60
Culls and commons	2.00@3.50
Spring lambs	8.00@11.00
Culls to choice lambs	4.50@8.00

BUFFALO LIVE STOCK

Buffalo, April 21, 1913.

Cattle receipts today were 150 cars. Receipts were light all last week and the market held steady under good demand. Today's market was slow and prices lower on all grades.

Choice heavy steers	$8.75@9.00
Medium	8.00@8.40
Yearlings	8.50@8.75
Plain heavy	7.75@8.00
Handy butchers	7.50@7.80
Good to choice fat cows	6.00@7.00
Good to choice heifers	7.00@8.00
Butcher bulls	6.00@7.25
Feeders	5.50@7.50
Stockers	6.00@7.00
Cows and springers	40.00@85.00

The calf market was firm all last week and prices remained firm. With 1,500 head on sale the market held steady.

Choice veals	$9.50@10.00
Light and thin	4.00@6.50

Sheep and lambs were in light demand last week and prices were 10 cents lower. Sheep are weak, and trading in yearlings is light. Today the market was active at an advance.

Choice lambs	$9.25@9.50
Poorer grades	6.00@6.50
Yearlings	7.00@7.50
Wethers	6.50@6.75
Ewes	5.50@6.00
Sheep	6.00@6.25
Clipped lambs	8.00@8.50

Hogs of all grades sold well thruout all of last week. Prices were a little lower generally. With 90 cars on sale today prices went still lower.

Heavies	$9.45@9.50
Mixed and medium	9.45@9.50
Yorkers	9.45@9.50
Light Yorkers	9.45@9.50
Pigs	9.25@9.30
Roughs	8.00@8.25
Stags	7.50@8.00

NEW YORK LIVE STOCK

New York City, April 21, 1913.

Cattle receipts for the week were 2,5[illegible] head. The market is steady to firm.

Steers	$6.15@8.90
Bulls	6.00@8.00
Cows	3.25@6.75

Dressed beef slow. Native sides, 12@14c.

Calf receipts were 6,435 head. The market is weak.

Choice veals	$7.00@10.50
Good veals	6.00@8.00
Culls	6.00@6.50

Dressed calves are steady.

City-dressed veals	12½@16c
Country-dressed veals	10½@14c

Sheep and lamb receipts were 10,742 head. Sheep are steady and lambs higher.

Sheep	$5.00@7.40
Culls	4.00@6.00
Lambs	7.75@9.40
Culls	7.25@8.40
Yearlings	6.50@8.00

Hog receipts were 6,160 head. The market is steady to firm.

Light to heavy	$9.50@9.75
Roughs	8.00@8.50

ELGIN BUTTER QUOTATION

Elgin, Ill., April 21, 1913.

The quotation committee of the Elgin Board of Trade this afternoon declared butter firm at 33c a pound.

NEW YORK MILK QUOTATION

The wholesale milk price is $1.61 per 40-quart can for class C; class B, $1.71.

PITTSBURGH HAY AND GRAIN

Pittsburgh, Pa., April 21, 1913.

Hay is now arriving freely altho the demand is not active. Poor grades are hard to sell at satisfactory prices. The straw market is steady under light receipts and a fair demand. No. 1 timothy, $15.50@16.00; No. 2 do., $12.50@$13.50; No. 3 do., $9.00@11.00; No. 1 light mixed, $13.50@14.00; No. 1 clover mixed, $13.50@14.00; No. 2 do., $9.00@11.00. No. 1 clover, $13.00@13.50; No. 2 do., $9.00@11.00. No. 3 prairie, $10.00@10.50; No. 4 do., $8.00@9.00; No. 1 oat straw, $9.00@9.25; No. 2 do., $8.75@9.00; No. 1 wheat, $9.00@9.25; No. 2 do., $8.75@9.00; No. 1 rye, $11.00@11.50; No. 2 do., $9.50@10.00. Ear corn arrivals are in strong demand. Market stronger. No. 2 yellow, 62@63c; No. 2 high mixed, 61@62c. Shelled corn receipts are light and uncertain. Market irregular. No. 3 yellow natural, 60@61c; sample, 58@59c. Oats are irregular, both as to receipts and price. Market easier. No. 2 white, 40½@41c; standard, 40@40½c; No. 3 do., 38@38½c; No. 4 do., 36@37c. The demand for middlings is very slow. Market dull. No. 2 white mids., $23.50@24.00; No. 1 brown mids., $21.00@21.50. Winter wheat bran, coarse, $21.50@22.00; do., medium, $20.50@21.00.

TOBACCO MARKET

Pennsylvania tobacco growers are being warned against a one-sided contract that is offered them by a well-known cigar leaf concern. By this agreement the grower is to raise Havana tobacco from seed furnished him ''free of cost'' and he is to use stable manure and lime as fertilizer. And it is further agreed that ''said company is to have the exclusive sale and handling of this Havana seed tobacco at and for a fair remuneration'' is a very wieldy term, and that the grower who signs such an agreement may expect little to say in fixing prices, and that his remuneration is to be fixed in accordance with the usual trust methods. It is said that some have been so thoughtless as to accept this agreement.

The tobacco industry, and especially the cigar tobacco industry, is to be dealt a serious setback by proposed tariff revision by the present administration. The clause in regard to it was written into the bill without a word of warning or an opportunity for a hearing from the tobacco industry. The most prominent provision is for absolute free trade between the Philippine Islands and the United States in tobacco and cigars. As those islands produce large amounts of tobacco and are themselves large importers from other countries, their total manufactured product is immense, and if allowed to enter our markets without duty will seriously affect the tobacco industry. The fact that the administration has declared that ''the farmer never needed to be protected'' and that ''what the people use must be cheap,'' coupled with the proposed average reduction of 50 percent in the protection of all farm products, creates a situation not at all promising to those who depend upon the soil.

It is charged that buyers are discriminating against Pennsylvania tobacco, a condition that is absolutely unwarranted, but which may be one of the reasons that present market conditions are so far from satisfactory. The fact is that the market is oversupplied, and thus glutted, a condition that will sooner or later abate unless growers plant the usual large acreage the present year. It should be remembered that no market can be sustained in face of overproduction. The few sales that were made were at prices generally below $9 per cwt.

In Wisconsin and some of the other cigar leaf sections the 1912 crop is practically all sold. With those localities out of the market and the Ohio section in such a plight as has been created by the recent flood, it is held that the demand for Pennsylvania leaf will soon be better.—H. F. Tweed, April 21, 1913.

Canada Winnings.—The rather frequent winning of important prizes by Canadian farmers indicates the high class of the competition that is provided by grain and stock growers of this northern country. At the last International Live Stock Show a Canadian steer carried off the grand championship. What made the winning still more notable was that the winner was fattened almost exclusively on one of Canada's leading grains—barley. At the last National Corn Show, at Columbia, S. C., Canada again won the sweepstakes prize in oats, making the second winning on their entry, only one more being necessary to give permanent ownership of the cup. These winnings, as well as the general class and quality of western Canada's wheat, oats, barley and flax help explain the large emigration from the States to our sister country.

A Good Dairy Feed.—We have been using one of the commercial dairy feeds that has given us very good results. We feed about [illegible] pounds of grain to a cow giving 10 quarts of milk and increase or decrease this amount according to the production of the cow. For the month of March we got [illegible] quarts of milk from 60 cows, 14 of which will be fresh before the middle of May. W. J. Truax, Delaware Co., Pa.

The Daughter of David Kerr

By HARRY KING TOOTLE.

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PRECEDING CHAPTERS

The city of Belmont is a typical middle-western village, under the rule of the political "boss," David Kerr. The daughter, Gloria, had spent her childhood away from home and knew nothing of her father's profession or business affairs. Supposing him to be a wealthy real estate merchant and a leader in Belmont society, she came home to take her place in the best circles of the town. To gratify her wish and continue the deception, David Kerr secretly secures the services of Judge Gilbert to introduce and assist Gloria in establishing herself in society. In return, Kerr is to give the full weight of his political influence to secure the passage of a questionable street railway franchise, the money coming from such influence going to Gilbert. The greatest menace to the success of the franchise effort is the attitude of young Joe Wright, recent purchaser and editor of the Belmont News, a reform newspaper. To further complicate matters, Mr. Wright is found to be an ardent admirer of Gloria, they having met in foreign travels.

CHAPTER VII

Gloria plunged into the work of making over Locust Lawn according to her own ideas with her usual enthusiasm. Accompanied by Mrs. Gilbert, she haunted the architect's office, carrying with her magazines containing pictures and descriptions of beautiful homes. When the plans for the alterations were finally approved, David Kerr learned with a sigh of relief that the changes could be made without driving him from the shelter of his own roof.

At the same time Gloria was planning for the changes in the country place she and Mrs. Gilbert were also busy preparing for the ball which would serve as her formal introduction to Belmont society. Her time was so engaged that she thought the suggestion of her hostess an excellent one when Mrs. Gilbert said that it might be better not to become tangled up with too many social engagements at a time when it was more vital to see that the Locust Lawn alterations were properly under way. The girl was aware, from what she had heard her father and others say, that things were dull at present, and she did not wish to spur them into a premature activity. When the ball was given for her it would be time enough to begin.

Mrs. Gilbert was not letting things drift, altho the daughter of David Kerr was not aware of it. Everyone in Belmont knew what Gloria did not: That she was about to make a great effort to secure recognition. Belmont was not in a receptive mood. Its first thought was that she was the child of a shrewd political trickster who had fattened at the expense of the town. The offspring of the leopard should not hope to be without spots.

Mrs. Gilbert was clever enough to have the girls to luncheon whom she thought might become interested in Gloria. They came, and in the majority of cases surprised Gloria by their charming manners and their beautiful clothes. Her court was to be even more brilliant than she had dreamed. The girls were invited one at a time, to give both Gloria and the visitor the opportunity of becoming well acquainted.

The luncheon guests came to call afterward, but by a strange mischance it was always when Gloria was not at home. She would go to the architect's office with Mrs. Gilbert, and would find on her return that several cards had been left for her. The ball was so near that she made no attempt to pay any calls herself. She was too busy.

Altho railing at the fate which took him away most of the time, the first three weeks after Gloria's removal to town were spent by Judge Gilbert in Chicago. Occasionally he ran over for a day, but even then his wife and their guest saw little of him. This would have made their evenings hang heavy on their hands had it not been for Joe Wright. He got into the habit of dropping in after dinner every evening and several times a week Mrs. Gilbert had him to dine with them. Late in the afternoons he and Gloria often drove together, the season of the year keeping them most of the time on the city streets. Once he drove with her to Locust Lawn, but as it was late when they reached there he did not get out, sitting in the runabout while Gloria ran into the house for a few minutes.

Neither Wright nor Gloria ever made an effort to direct the conversation into the intimate channel it had taken the night they first had met in Belmont. One might have almost thought they had agreed to consider themselves merely good friends, so impersonal were they in what they said. For this there was a reason; rather, there were two reasons, his and hers.

Wright was keeping a firm grip on himself because he knew the truth and was afraid. Gloria was self-possessed and would not have permitted him to pass the border of friendship, had he dared, because she wished to know Belmont well. Even a hint of an entangling alliance would prove a hindrance. Thus it was that each was happy in the other's company. And if perchance they looked the sentiment that each had inwardly resolved not to breathe, they were happier still in the thought that some day their dreams would come true.

The paper was occasioning Wright no great anxiety. Somewhat to his surprise the advertising revenue was showing most gratifying gains caused by the increase of local business. The Banner had more advertising, but the new owner of the afternoon paper had no cause to complain. Even his advertising manager could not explain it. Main Street merchants who had been out of the paper for years began to send in copy without solicitation. This made the head of the advertising department think that the millennium was about due. The real reason, unknown to everyone except the merchants receiving the message, was that Dave Kerr had sent out the tip for them to throw some of their patronage to the News.

This was a shrewd move on the part of Kerr. He wanted Wright to have such a volume of business that if he should order all the advertising he could influence cut off, the paper would be instantly crippled. If the News had not much business, then anything Kerr might cause to be dropped out would only show that his power was slight. If he had to strike a blow he wanted it to be with a sledge hammer.

Another important consideration which led him to take this step was that the merchants might believe, and he tipped it off in a manner which would be most apt to make them jump to that conclusion, that he was himself interested in the News. This would tend to minimize Wright's influence if he should attempt a crusade, since the public would wink and say, "It's all a bluff, old man Kerr himself is interested in the paper." The boss even calculated that this would be strengthened by the frequency with which Wright was seen in his daughter's company. He was not looking for trouble, he never welcomed it, but he sought always to be prepared when it came.

During her first weeks at Mrs. Gilbert's Gloria saw little of her father. She had at first frequently dropped in at his office, but he had intimated that it was no place for her. Sometimes she would be at Locust Lawn when Tom brought him home in the afternoon. When Judge Gilbert was home from Chicago once he dined with them. Every day, however, she talked to him for some time over the telephone. He always seemed interested, apologized for not seeing her more, and let her rattle on until she had quite exhausted the news of the day. Occasionally he complained to her of his rheumatism—no one had ever heard him speak of it before—and she would beg him to take good care of himself, since it was with him that she wished to dance first at her ball.

There was one girl whom Mrs. Gilbert sought as a friend for Gloria. She mentioned it to her husband the first day their guest arrived, and he suggested that she be invited to lunch the next day. Accordingly Mrs. Gilbert telephoned Miss Laura Piper and asked her. For the following day, however, Miss Piper had an engagement. When several other days were mentioned she had engagements for those also. Could she have been made to accept Gloria, the task of conquering Belmont would instantly become less arduous. Her father was head of the great Piper Mining Company, and her family was looked upon as one of the most exclusive in the whole state. If Laura Piper would, she could make it extremely pleasant for Gloria. But Laura Piper had her own and her family's idea about the Kerr breed, and no matter how nice Gloria might be, she was still her father's daughter.

Mrs. Gilbert reported her lack of success to her husband on his return from his first trip to Chicago, and he mentioned it, almost casually, to David Kerr when they met the next day. The boss inquired the particulars, but made no comment. That he was not unmindful of the episode developed two days later when the Piper Coal Company received a complaint from the secretary of the school board that there was an undue quantity of slate in the last coal furnished the public schools. While worrying with this, the company's legal department sent word to the president that the city solicitor had just notified the company that one of the important spurs into an uptown coal yard crossed a street without authority of law.

Old man Piper swore by all the gods in mythology that it was the worst outrage ever perpetrated upon him in all his business life. He had but a day or two to catch his breath before Mrs. Gilbert telephoned at the dinner hour asking Laura to luncheon the next day. The whole thing dawned on him when Laura flounced back from the telephone and announced petulantly that she would not meet that odious Gloria Kerr. He said nothing until after dinner, then calling Laura aside he ordered her to telephone Mrs. Gilbert and withdraw her refusal. His pocketbook having been hit, Piper was willing to make some sacrifice to determine the reason and what he was to expect in the way of further attack. He kept his mouth closed, and waited.

Laura returned from the luncheon with a favorable opinion of Gloria, but she could not forget her parentage. Upon being questioned she told her father she did not care to put Gloria on her visiting list.

"Suppose I have someone to visit me who asks: 'Who is that girl you introduced me to?' complained Laura. 'And I'll have to say, 'That's Gloria Kerr, the boss' daughter.' Then what will the visiting girl think of Belmont society, and what will she think of me? I'm sure I would be surprised if I went to visit anyone and they introduced me to the son or daughter of a man like Kerr."

"Laura," answered her father, "I think you'd better go down to New York for a couple of months."

And two days later Laura went, after having called when Gloria was not at home. She never knew why her father urged her to go.

Piper felt it would be cheaper to pay the expense of a New York trip than to have his company stand the continuous annoyances by which it could be worried, if what he suspected was true. When he inquired about coal for the school board the complaint department reported that the secretary had been mollified but hoped it would not happen again. As for the city solicitor, the legal department refrained from asking about the track across the street and that official never wrote again.

Old man Piper kept his mouth shut, but he knew he had been taught a lesson.

Kerr was keeping a sharp eye on things, but his hand was suspected rather than seen in any move that was made. As the time for the ball approached, his rheumatism troubled him more and more, and upon the advice of Dr. Hayes he decided to go to Esmeralda Springs to drink the water. Sam Hayes took him down and came back with the comforting report that he was already better. He was not well enough, however, to return for the ball.

The ball given in honor of Miss Gloria Kerr at the Belmont Club by Judge and Mrs. Gilbert was a memorable affair. The ballroom was crowded, and Gloria deserved the praise she received from every quarter on her beauty, her cleverness, and her light-hearted temperament. She did not hear the expressions of regret that she was the daughter of David Kerr. The next morning the Belmont Banner had a two-column head over the story, and gave a long list of names preceded by "among those invited were," instead of by the usual "among those present were." There were a number notable by their absence, but there being a large crowd present and she being a stranger, Gloria did not know this. She was too busy with the men to think what girls were present.

Truth to tell, it was a fairly representative assemblage, drawn together out of regard for Judge and Mrs. Gilbert and also by curiosity to see what kind of a girl Gloria Kerr was. If the president of the Piper Coal Company had stopped the poker game at the Belmont Club the night before to tell his experience there would have been several young ladies among those present at the ball who did not lend the charm of their presence to that occasion.

When Gloria danced with Wright she searched the line to find a Belmont man to compare with him, and to her thinking there was not one in the same class. As for Wright, his search was over the night they had met again in Belmont.

In their first dance, holding her close as if to shield her from all the world, he called to mind the day at Versailles when together they had wandered thru the gardens. Then he had repeated some verses from the book he had given her on her birthday. Now as they danced he whispered:

"Do you remember

Spring in the hills, Beloved,
On the side of a meadowed slope;
And love in our hearts, Beloved,
Love and spring and Hope."

"I remember. We were going out there again, but you never came back; and so I went alone."

"I wish you had taken our book," he said. He always referred to the book of verses as being their joint property. "It would have told you what I was not there to say."

Gloria smiled. Never a word had been said, but each understood.

"I knew one thing the book said," she confessed. "It was what I said—and said more times than one:

Come over the sea to me, to me,
Come over the sea to me.
The little ships go sailing by
But never a ship brings thee!"

They danced, forgetful of everything but that they were together. A man had cried in the wilderness of the world for his mate and she had answered.

Wright would have gone farther, have made a formal declaration, but first he wanted several things settled. He felt that he could not stay in Belmont if he married Gloria. How to get rid of the paper was a question. He hoped thru a newspaper broker to trade it for one in some other place. Then he and Gloria could begin life there together. The News was beginning to make money, paying its way and leaving something for future payments on the property. Best of all, there was no fight on his hands which would hold him in Belmont.

Mrs. Gilbert came into Gloria's room to kiss her good night after the ball. When they had talked over the affair for an hour the girl cried in the ecstasy of her joy.

On that very night Alderman Grunewald introduced an ordinance giving the Belmont Interurban Railway, a new corporation, right of way down Maple Avenue and making provision that a small depot should be provided for the convenience of patrons at Benton Park.

CHAPTER VIII

When Wright reached his office the morning after the ball, he found his attorney, Arthur Morrison, waiting for him. He had been drawn to Morrison the first time he had met him and had asked him to take care of the paper's legal business. In this his judgment had not been warped by a sudden friendship, for the young lawyer was worthy of his confidence. Like Judge Gilbert, he had risen from an humble house, but unlike the adviser of Belmont corporations he had made his way independently of the malign influences which constantly seem to seek to attract young men of talent who follow the law as a profession. To him, both as his legal adviser and his friend, Wright had talked freely and had rejoiced to learn that Morrison's ideals and hopes for Belmont were the same as his own.

"Even if you hadn't asked me to watch things with you while you are still a stranger to Belmont," Morrison began, "I think I would have come to you. Last night while we were enjoying ourselves a bill was introduced in the council for a car line down Maple Avenue."

"I saw an account of it in the Banner, and thought it strange nothing had been made public before it was introduced. Who wants the franchise?"

"They're under cover. It's the Belmont Interurban Company, a New Jersey corporation, and the men named as incorporators are only dummies."

"That isn't usual, is it, with honest men?"

"I don't know anything more about it than you do, but you'd better investigate."

"When does the bill have its next reading?" asked Wright, after considering what was the paper's best move.

"Not until Tuesday night."

"That gives us five days. If we make a noise won't they call a special meeting and push it thru?"

"Kerr isn't likely to do that. He's interested, I suppose, but how?"

"We'll get busy today," Wright said decisively. "A few pointed questions on the front page may bring them out from under cover."

In the conference which ensued the two men discussed every possible phase of the question, yet they never dreamed that it was part of the stock yards scheme. What aroused suspicion as much as anything else was that there was nothing they could find on which to base suspicion. When Morrison left it was with the intention of scrutinizing a copy of the proposed ordinance carefully.

Wright sent a reporter to interview Alderman Grunewald, and all other reporters were instructed to find out what the public thought of it and any definite facts that could be brought to light. The city editor himself took an hour off to go to the office of Rosenbaum & Rosenbaum, who it was learned had given Grunewald the bill to present for them.

The drag net which the News spread did not seem productive of results calculated to bring anything to light. Alderman Grunewald had introduced it at the request of his good friends Rosenbaum & Rosenbaum and knew nothing about it.

Rosenbaum & Rosenbaum said that the proposed franchise spoke for itself, and that the road would prove of inestimable benefit to Belmont, since in the near future it would be extended to Corona, and all the people of that little town and the villages along the line would do their shopping in Belmont. The incorporators were Chicago men with plenty of capital back of them.

Wright telegraphed a Chicago news agency to find out who the incorporators were. At his suggestion the city editor tried to get Kerr at Esmeralda Springs by telephone, but was unsuccessful.

Only one clue was found which of itself was suspicious, and it was not one which could be used that afternoon. The courthouse reporter had dropped into the county surveyor's office, and talked about surveying in general and the work in Belmont County in particular. Was anything going on just then? This elicited the reply that the spring was not far enough advanced for the usual work, but that the stock yards company had had men out. What were they doing? They were seeing how far they could save their tracks along the river and rearranging the quarantine tracks for Texas cattle which were by themselves to the east of the main yards. This was all the courthouse man brought back to the office, but it was duly presented to Wright by the city editor.

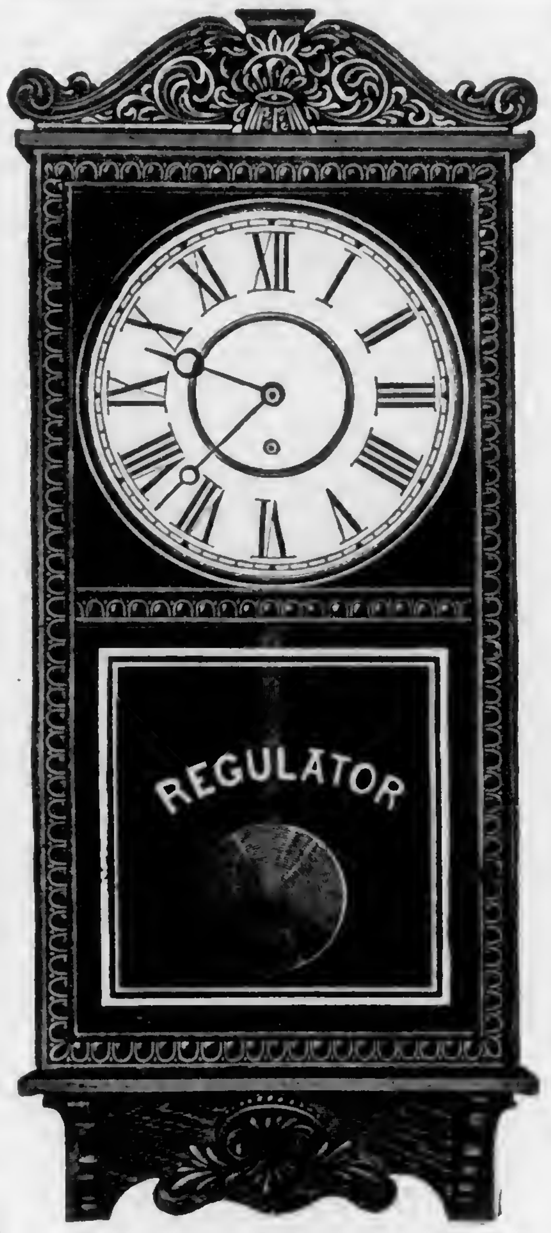
That afternoon Belmont rubbed its eyes as it looked at the front page of the News. In the last column under an extended head was a story about the proposed car line down Maple Avenue. It was not replete with facts and figures, but it asked a great many questions and contained several interviews which said nothing. Even the property owners along Maple Avenue who had consented to the line and then been pledged to secrecy until the matter was made public by the introduction of the bill in council, knew nothing more than that Rosenbaum & Rosenbaum had secured their consent.

The Chicago News agency did not send what information it gathered until too late for use on that day.

Sam Hayes bought a paper on the street, read the story, and rushed for a telephone. He paid two dollars and thirty cents for the privilege, one could not call it pleasure, of talking with Kerr at Esmeralda Springs. He read the paper to the boss, the front page story and the trenchant short editorial of inquiry. Kerr asked that he be connected with Gilbert, but already the judge was trying to get Esmeralda Springs, having seen the News just a few minutes after Hayes. Their conversation was short, Kerr knew the facts, and it was mainly a discussion of how the Banner should treat the matter in the morning. The boss decided his paper should insist that the News was trying to knock the town. The attack was to be upon the News, thus diverting attention from the real issue. This command, properly phrased, was dropped into the eager ear of Deacon Winthrow, and he proceeded to write a scathing editorial holding up to scorn the paper which would try to barricade the path of the car of progress. The deacon felt proud of his editorial when he read it in the proof, and was warmed with a self-satisfied glow to think that he had thought of it. He still lived in the age of personal journalism, and to lambast the other fellow personally was part of his editorial creed.

Before the paper came out, Wright telephoned Gloria that he would be unable to drive with her but that he would call in the evening. They had reached the point in their fast friendship where she was not unwilling to pout to show her disappointment.

(To be continued.)



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Household

THE COUNTRY KITCHEN

By Marion Harris Neil

The first thought of the country housewife in planning her kitchen should be on the importance of "step savers." Whatever conduces to lightening the labor is an economy of health and wealth. People living in the country rise earlier than their city cousins, consequently they can accomplish more in the day, but it need not be a day of drudgery entirely if the working system has been well arranged. Housekeeping should be taught as one of the arts of education, its every branch is valuable to know, but the mastery of the secrets of the kitchen, careful buying, use of "left overs," and the care of food stuffs that make the home comfortable and keep down the expenses are most important of all.

In planning the kitchen we may as well start with the floor. If it is of hard wood then it is a case for oil or paint, both of which have their disadvantages. If of soft wood, the oil cloth covering will be found easier to care for, with zinc around and under the range. It is quickly wiped up and always seems fresh and clean, and it is also easier to stand on than the hard bare floor. If the ceiling and side walls are painted a good shade of yellow, they may be readily sponged off at any time and always be immaculate. The window panes ought to be the large ones, as they are easily cleaned and give the best light, while the shades may match the wall paint.

The number of tables in use will depend upon the size of the kitchen. Where space will permit, four will be found best. There should be one covered with zinc to receive all the hot pots and pans direct from the fire, one covered with oilcloth for ordinary use, the ironing table that turns back and makes a settee in which all the ironing things may be kept, and the folding legged baking table that drops flat against the wall when not in use. Two low stools will be found of great comfort to mistress or maid, the one low enough to sit before the oven when basting meat or watching things that require constant attention, and the other high enough to sit on while stirring things cooking on the stove or to prepare fruits and vegetables at the table or sink. The small step ladder chair and a plain chair complete the furnishing.

A small vegetable bin, covered and having three compartments, with castors that may be rolled under one of the tables will save too frequent trips to the barrels in the cellar. The gallon oil can and the painted wood box are not to be forgotten in counting the step savers, any more than the pad and pencil hanging above the bill holder.

A peep into the cold pantry should reveal a small refrigerator for butter and milk, as well as for the so-called delicacies at all seasons, for possibly the main refrigerator may be in the cellar or an outside shed building. Speaking of refrigerators, a regular wooden tub has been known to do extra duty most successfully. Have a hole bored close to the bottom and corked, then place the tub on a box or bench and a pail under it, and a good, tight, wooden cover fitted over the top.

On the pantry shelves a row of one and two-quart Mason jars, with the large tops and well labeled, will be found very handy to stow away the dry stuffs in, safe from mice and vermin. A nest of six wooden cheese boxes, also with labels on them, make good receptacles. The original pasteboard or paper packages get torn and look very untidy on the shelves, and make work harder to keep cleaning up after them. The wooden-covered buckets and the tin canisters all aid in taking the proper care of foods. In arranging the kitchen shelves thought should be given to placing the articles most constantly in daily use on the lower shelves. Back of, or near the range, a shelf may hold salt and pepper box, and under it hang the quart and pint measures and the cullendar.

In the towel drawer a goodly pile of cheese cloth squares will prove a great saving on the dish towels, and the bags for celery and lettuce which save having them loose in the ice box may also be kept on hand. The needs at the sink are a soap dish for the two kinds of soap, a soap shaker to use up the little pieces, a three-cornered sink garbage tray for parings and waste, a rack for vegetable and sink brushes, and a good dish drainer. All of the brushes and brooms are best hung up, as they keep their shape and stay clean longer, and incidentally they are out of the way. If there are set tubs in the kitchen, the zinc covers will be found better than the old wooden ones. A three-fold wooden screen with oilcloth panels, four feet high, is added to some kitchens to stand around the table where bread is raising or anywhere that a draft is unwelcome on cookery.

Now the scene it set, and enter the housewife with one maid or a two or three day a week helper, and like a student starting in with the profession he has learned, she must demonstrate her ability to be the distributing partner in the firm of husband and wife—home makers.

Monday we wash, Tuesday we iron, Wednesday we bake, clean silver, windows and do odd jobs. Thursdays we clean upstairs and go out in the afternoon. Friday we clean downstairs, and Saturday we bake, clean kitchen and refrigerators and care for all the Sunday buying. This is what her text book tells her to use as her peg upon which to hang her working system. No matter what comes between the breakfast and the dinner hour, they should be undisturbed in their peaceful harmony if the family is to be happy. To leave a pail of scrub water in the middle of the floor to get a meal, or wet clothes in the tub, or have dinner late to finish some bit of ironing is but an inexcusably bad outlook for the system. To leave lamps to fill after the sun goes down and they are needed is one of the most unforgivable crimes of country life. The days are long and much may be done between the hours of nine and five.

The country store buying to any extent is one of the habits to be side-stepped early in the housekeeping game. To buy in quantity where one has store room and cellar facilities is far the cheapest in the end. The woman becomes her own storekeeper, and only takes to the kitchen enough for the weekly needs at a time.

The wise woman will also arrange her time so as to have a half hour in the morning to go to the silence of her own room and read something of an uplifting nature, and an hour in the afternoon to nap and rest as she sees fit, if she wishes to work without fatigue.

We must not forget in the numeration of labor savers the paper plates, cups and napkins, a supply of which should be kept in all up-to-date kitchens. Also the paper towel roll which has replaced the old-time roller towel quite largely. Sash curtains at the kitchen windows are very dainty, but as they absorb light, smoke and odors they are not really practical. One thing not to be forgotten is that sharp kitchen knives are an economical necessity, and are a great comfort to the cook. Where a house is run upon a well-arranged system extra guests make no trouble, and help are easier to keep.

THE FARMER'S BEST MONEY MAKER

Summer Boarders

A close examination of our accounts at the end of last year showed that of all lines carried out on our farm, boarders gave the greatest profit. Many people object to boarders, thinking that they are a nuisance, but we have found they are, as a rule, quite the contrary. Generally they are out on a vacation and are determined to have a good time. Should a long season of rainy weather keep them from the water or their favorite pastime, they are quite as ready to enjoy the house, music, books, papers or games. We have made some pleasant friendships among our boarders, and have entertained them for a few days in the winter or during the gunning season.

Many of our eastern sections are very favorably located for this purpose, and many farm women might find it to their advantage to try boarders for a season. Our farm seems naturally a suitable location, as we are high, have woods and water near, and shady yards, so rest or recreation can be found as desired. Boarders are, as a rule, city people, and enjoy the fresh products of the farm, and so we depend chiefly on our poultry, fresh fish, country-cured hams and bacon, eggs, fresh fruits and vegetables to supply the table. Care must be exercised that foods be wholesome, well cooked, pleasing to the eye and the house kept in a sanitary condition. But do we not do these things for our own family? They why object to a few tired mortals sharing it with us, especially when they are willing to pay for it?

We can not accommodate crowds, and believe it is better to have a few properly looked after than many crowded in, just for the sake of taking them. We do not have people of wealth, but a refined class of professional men with their families. We enjoy the company and the association of these people of different professions and different views. When undesirable guests creep in, they can be tactfully gotten rid of. Occasionally in the spring or fall a patient recovering from an operation is sent us, or someone suffering from a nervous disorder. It has been suggested that we turn our house into a country home for convalescent persons, but the servant question has made this impractical in our case.

One other profit that we derive from boarders is that we often sell them farm products, either to take home with them or they order occasionally a ham, a can of lard, or something that has struck their fancy. We seldom take week end guests, as we are a little far from railroads, but now and then a man wishing this time with his family, who is already with us, or some prospective guest wishing to view the place, are made exceptions.—J. M. Anderson, Delaware.

Let Us Send You This Collection of 8 Beautiful Roses

Every lover of beautiful roses will appreciate this offer. These are the kind that bloom every month of the growing season, and produce great masses of large double flowers from early spring until late fall. They possess all the good qualities of vigorous growth, delicious fragrance, and beautiful colors.

Printed instructions are enclosed with each collection, and we guarantee them to reach you in healthy growing condition.

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Sunburst.—A distinct new variety, having no equal in color, growth or beauty. A rapid, healthy grower, thriving in every condition and bearing its immense flowers on strong, upright stems in amazing profusion. The color is most difficult to describe, an intense orange scarlet and golden yellow, extremely brilliant in effect and exquisitely beautiful.

My Maryland.—A rare combination of a poetic name and exquisite beauty. A great outdoor rose of extreme hardiness. Flowers are of indescribable charm of a brilliant lively shade of pink, which deepens as the flower expands, until it fairly glows with its warm, rich color and delightful fragrance.

Kaiserin Augusta Victoria.—A crowning masterpiece and hailed by flower lovers everywhere as the greatest rose creation of modern times. Hardy and vigorous grower, with great loads of rich, creamy white fragrant, slightly lemon-tinted flowers; a color effect both new and distinct.

Souv. President Carnot.—Unquestionably the finest rose of its color. The growth is vigorous, the foliage dark green and very handsome; flowers are large, both in bud and expanded flower, double to the center and opens bautifully; color, rosy-flesh, very soft in the center and shaded with a lighter flesh at the end of the petals.

Rhea Reid.—A thoroughly distinct rose, possessing every quality to stamp it with the hallmark of perfection. A strong, healthy grower, producing heavy deep green foliage and handsome double flowers; the color a vivid scarlet crimson, which intensifies as the bloom expands.

La France.—Exceedingly sweet and handsome. An ideal garden rose, commencing to bloom soon after planting and bearing a great profusion of flowers all thru the season. Flowers and buds are large and wonderfully beautiful, possessing the distinct delicious La France perfume; color is a lovely shade of soft silvery pink.

Md. Abel Chatenay.—This splendid rose is one of the very best of its color—rosy carmine with darker shade. Full, deep, double flowers are borne in great profusion, and the bush is a rapid, compact grower, perfectly hardy. An ideal garden rose in every way.

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Soft water is preferable for use in all laundry work, but if not available, hard water should be softened on the day previous to washing and allowed to settle.—Juniata L. Shepperd, Domestic Science, Minn. University.

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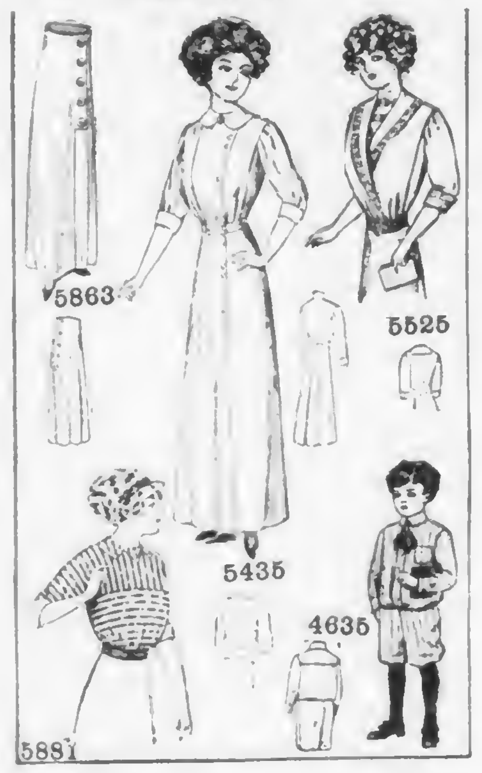

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4635—Boys' Shirt Waist Suit.—Five sizes, 4 to 12 years. For 8 years it requires 2¾ yards, 36 inches wide. Price, [illegible] cents.

COUNTY NOTES

Armstrong Co., Pa. (S. W.), April 7. Cloudy, cold and a light wind. Cattle scarce and high. Old cows worth 5c lb., live, if fat; No. 1 timothy, $16 ton; No. [illegible] clover, $15; potatoes, 75c@$1 bu., retail; eggs, 20c doz.; poultry, live, 16c. Work advancing rapidly. Labor scarce. Spraying held back on account of stormy weather.—Arthur Allshouse.

Pike Co., Pa. (N. E.), April 14.—Rainy. Fresh cows, $40 to $50 each. Hogs and pigs scarce and high, sell from $9 to $10 each. Winter grain looks fine and grass has started well and promise of an abundant crop of hay and grain. Farmers plowing for oats and putting out manure; also repairing fences.—Rupert P. Nilis.

Carbon Co., Pa. (E. C.), April 11.—Weather has been mild with much rain during March. April has been cold to date. At recent public sales, ordinary dairy cows sold at from $50 @65. Dairy herds are being improved by the purchase of purebred sires of the various breeds. Spring plowing is well under way, and a considerable acreage has been planted to potatoes and seeded to oats. A new grange was organized in the Lowerytown Valley on the 8th inst.—Brice Brenckman.

Lycoming Co., Pa. (N. C.), April 10.—Cold and wet; very windy. Moving done. Public sales over. Farmers getting down to steady work. Wet spring has made plowing late, but a good bit of upland has been turned. No oats sowed yet. Some are planting early potatoes. Some garden stuff planted. Grain and grass making a fine start. Farmers hauling away hay at $16 per ton and finishing off their potatoes at 60c per bu.—Clyde E. Hall.

Mercer Co., Pa. (N. W.), April 8.—Weather cool with much rain. Stock not yet out on pasture. Veal calves, alive, 7½c lb.; eggs, 15c doz.; butter, 28c lb.; apples, 40c bu. Potatoes almost unsalable. Markets dull. Spring plowing just begun.—A. K. DeFrance.

Northumberland Co., Pa. (E. C.), April 11.—Weather fair. Horses high, $200@$275. Live stock looking fairly good. Grain is as follows: Corn, 60c; wheat, $1; rye, 70c; oats, 42c. Plowing is now the main farm work; ground hard from heavy rains.—R. J. Speer.

Clarion Co., Pa. (W. C.), April 11.—Weather has been wet most of time. Cattle are scarce, especially dairy cows; selling at $50@60. Horses also high and scarce, as high as $200 being asked for two-year-olds. Wheat looks promising. Eggs selling for 15c; butter, 25c; do. creamery, 35c.—H. F. Niederriter.

Erie Co., Pa.(N. W.), April 10.—Very wet but not very cold for this time of the year. Young stock is not very plentiful. Dairy cows are selling high. Butter, 32@38c; eggs, 16@23c; pork, dressed, 12c; veal, dressed, 12c; potatoes, 65c; cabbage, per ton, $3@6; hay, baled, per ton, $12. The farmers have been busy the past month making sugar, repairing fences and caring for their stock. Some plowing has been done.—L. Howard Morton.

Putnam Co., N. Y. (S. E.), April 10.—Frequent rains; fair weather occasionally. Butter, 40c lb.; eggs, 25c doz.; hay, $20 ton. Prospects for a good crop of winter rye. Farmers busy hauling manure and plowing.—Wm. Seims.

Huntingdon Co., Pa. (C.), April 9.—Weather fair, cool and pleasant. Live stock in good condition. Plenty of feed. All stock selling high. Wheat selling at $1; oats, 40c; corn, 70c; potatoes, 70c; hogs, 9c; horses, $150 to $300; cows, $50 to $75;, butter, 35c; eggs, 20c. Farmers rushing spring work. Plowing for corn and oats mostly done. Oat seeding will begin in a week. Orchards being sprayed. Labor scarce.—Clair L. Harnish.

Harford Co., Md. (N. E.), April 11.—Weather cool, with wind and rain. Live stock of all kinds high. Horses and mules selling at $200 to $250 each; fresh cows, $45@65; veal calves, 9c lb. Cattle and hogs are bringing good prices. Young clover and pastures looking exceptionally well for this time of year. Farmers are busy sowing oats and planting potatoes. It is feared the peach crop was hurt by the late frosts. D. G. Harry.

Bedford Co., Pa. (S. C.), April 9.—Cold and wet; several freezes. Pears and plums partly killed, but enough left for a crop. Grain is not making much start on account of the cold weather. Most of the San Jose scale spraying is done, with good indications for a large apple crop. Apples selling at from $3 to $3.50 per bbl.—N. F. Richards.

NEW READERS

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Veterinary

(Conducted by W. C. Fair, V. S.)

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Bone Spavin.—I have a mare, 12 years old, that has been lame for the past 3 months. Our local veterinarian has been treating her for spavin. He has blistered her three different times, but she fails to show any improvement. I have been watching the veterinary column of Pennsylvania Farmer, where a similar case was treated, and failing to find this information I write. I have blistered hip twice. I am inclined to believe her lameness is "whirl bone." She is used 3 hours a day at plowing, but this work seems to be too much for her. She has had a colt every year lately, and has one by her side. W. T. P., Middletown, Del.—If her lameness decreases with exercise, then I believe she has bone spavin, but if not, she may perhaps be lame in hip. If lame in hock, blister her with 1 part red iodide mercury and 4 parts lard, every week or 10 days. If in hip, apply 1 part powdered cantharides and 4 parts lard every 10 days.

Warbles.—Nearly one-half of my cows have bunches on back, but are seemingly in good health. A neighbor told me that each of these bunches contained a grub, but I doubted him. B. M. G., Oil City, Pa.—Your neighbor is right; each of the bunches contain a grub which, if allowed to mature, will develop into a gad-fly, which will produce more grubs the following season. Open skin with a sharp penknife, squeeze out grub and kill it. Then apply boracic acid to sores, twice a day.

Irritation of Ovaries.—I have a 7-year-old mare that I recently got hold of which seems to be in heat at all times. I would like to breed her this spring. Could you recommend a remedy, or will she be just as apt to get in foal as if coming in heat every three weeks? C. B. G., Leon, N. Y.—Your mare will perhaps get with foal soon after being mated. Giving her drugs will not produce good results.

Sow Eats Pigs.—We have a sow that is due to farrow in 3 weeks that is inclined to eat part or all of her young pigs. I would like to know if there is a remedy for a vice of this kind. A. B. D., Girard, Pa.—A hog breeder recently told me to sponge the sow's head, face and nose with vinegar once or twice a day, and to wet pigs with one part vinegar and 5 or 6 parts water, the sow would leave them alone. I have never tried this remedy, but he claims it has given good results. Feed some meat scraps or tankage in ration to satisfy natural craving for such food.

Rheumatism.—I have two sows that have pigs 4 weeks old. The sows have become so sore that they are unable to walk at all well, and they are inclined to remain down most of the time. I am anxious to know what brought on this trouble and what can be done for them. A. N., Warsaw, N. Y.—Your sows suffer from rheumatism and will be benefited by giving each of them 20 grain of salicylate of soda at a dose, 3 times a day. They should be fed less corn, more oats, oil meal and roots.

Barren Heifer.—Indigestion—Barren Sow.—I have a heifer, fresh last fall, that has not been in heat since. She appears to be perfectly healthy. I also have another heifer that came fresh 6 weeks ago that is losing flesh and failing in milk yield. She eats too little hay, but cleans up her chop. She is fed 2 quarts of chop, twice a day, and all the hay she will eat, but she is not thriving. I also have a sow, 9 months old, that has never come in heat. A. C. L., Meadville, Pa.—Give your heifer 1 dr. ground nux vomica, 15 grains powdered cantharides and 3 dr. ground capsicum, at a dose in feed, 3 times a day. Give your other heifer ½ oz. ground gentian, 1 oz. ground ginger and 1 oz. cooking soda at a dose in feed, 3 times a day. Give your sow one-sixtieth of a grain of strychnine, ½ dr. powdered capsicum and 1 dr. ground ginger at a dose in feed, 3 times a day.

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VOL. 33.—No. 18. PHILADELPHIA, PA., SATURDAY, MAY 3, 1913. 50 CENTS A YEAR.

Headle Dr. T. J. Rutgers College c813

Teaching Agriculture in Public Schools

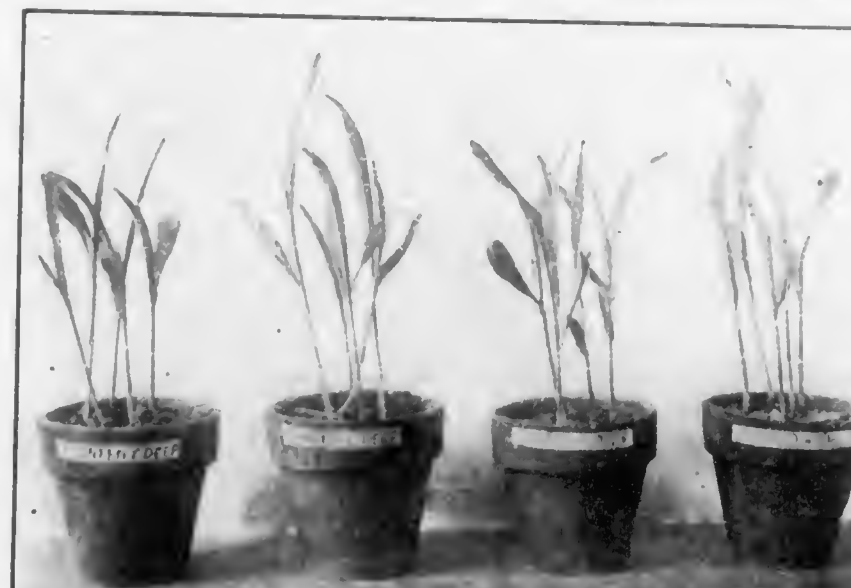
By ARTHUR D. CROMWELL,
Chester Co., Pa.

Agriculture when correctly introduced is a very helpful branch in those schools where the pupils come largely from country homes. It is not, as many suppose, an extra branch, for we are already required to spend one year on home geography. If the home geography is made practical and is made a study of real things, we have just what we have been trying to get taught under the name of agriculture. If the child is asked to learn to spell the words which the home folks should know in order to read agricultural literature intelligently, if he is taught to write about some things which he believes worth while, if he is taught to use some of the applications of the arithmetical processes in figuring things that seem worth knowing to a child of his age, if he does these things, we do not have a new branch, but the old branches vitalized and made interesting. That is just what many teachers have done with agriculture in the public schools. In one county half of the schools taught agriculture and half did not teach it. Three-fourths of all failures to pass the eighth grade examinations came from that half of the county not teaching agriculture.

We have not settled all of the problems about teaching agriculture, but it is to be hoped that when we get them settled, we will see that while there is no particular objection to the pupil's having a book, yet a book is of very little value except as a kind of outline for the teacher. The Pennsylvania State Department of Education issues a little circular which is all that either pupil or teacher needs for the study of agriculture in a rural school and nearly all that is needed for a high school. Among the other things which seem to be settled are some things which we call the Don'ts for Teaching Agriculture.

Some Don'ts.—Don't teach words only. Don't take too much time. Don't teach all of the children, but keep the agriculture as interesting work for the older ones. Don't neglect the other branches; if you do not get more reading, writing and arithmetic with agriculture than there was without agriculture something is wrong with your teaching of the agriculture. Don't neglect to keep statistics up to date. If agriculture does not do more than this it is well worth while, for we are spending much time learning things in geography and arithmetic that were true a few years ago but are not true now. The teacher who teaches agriculture should make frequent clippings from the farm journals, especially along in November and December when the annual crop reports, the reports of the boys' and girls' clubs, etc., are appearing. Then, too, the live, up to date treacher is to get the children to be on the lookout for the reports of dairy tests, egg-laying contests, etc. When found, they too are to be cut out or indexed and filed for future reference when the class is studying cows or chickens. This extra reading for things that they think they may want is one of the reasons why children studying agriculture learn to read faster than children in schools where agriculture is not taught.

Don't try to teach too many facts, but teach principles, cause and effect, laws and practices instead. Don't neglect to teach something worth doing and not alone things worth knowing. Don't fail to treat local practices with respect; they may not be the best, they may be such as should be changed some, but little is gained by sneering at them. Don't fail to ask the farmers about the work at times; they know some things which teachers need to learn.



A SCHOOL DEMONSTRATION IN PLANT GROWTH.
Corn planted 1, 2, 3 and 4 inches deep, from left to right. The height of corn planted 4 inches deep may be due to stones in bottom of pot, giving aeration similiar to that obtained by tile drainage.

What to Teach. When we teach agriculture, we should parallel the seasons, give our work what is called seasonal sequence or follow the dominant home interest. One reason why we believe that the farmers' institutes are to be short lived is that they teach things so far removed from the present needs of the farmers that the latter will forget what is said before they need to use it. That applies to the short course also. But if we adopt the Minnesota plan and have the teacher of agriculture teach in the high school during the forenoon and spend the afternoon like a farm manager, with the farmers, we are surer of giving knowledge when wanted.

During the spring months, as interest in the soil revives, we may teach soil, why we plow, why we cultivate, what constitutes good plowing and good cultivation; we may teach weeds, how they appear as they come up, how many come up on two square feet of soil, what injury they do, etc. There are some things that a farmer boy can learn clearer and in much shorter time in the school than in the field where results come slowly and are at times obscure. Some bottles with the bottoms knocked out and then cloths tied over the neck openings may be taken and inserted upside down thru a board with large holes bored in it. These bottles may be filled with different kinds of soil. Then let the class watch to see which kind of soil retains moisture longest. Glasses to catch the moisture should be placed under the bottles. Then the same bottles may be used with the glasses filled with water and the water allowed to be drawn up by capillarity. If the dirt in one of the bottles is well broken with an inch or more of straw, as it would be in a poorly plowed field, the children will see very quickly where the upward movement of the water stops.

The seed corn box, besides enabling us to learn whether the ears will grow or not, makes material for a number of lessons. One is on root hairs which are found no better in any other place. Again, the plants may be taken from the seed corn box and transplanted into water and different soil cultures and allowed to grow for a few weeks. One may be fertilized one way, and another another way. If a second bottle, or better a jar is treated the same way and kept as a check, some valuable lessons may be taught.

A PLEASANT BACKYARD AT WOODBINE FARM.
Home of J. T. Campbell, Crawford Co., Pa.

Most botanists and plant specialists are reasonably sure that commercial fertilizers including lime that has much magnesium in it, are worse than useless, while fertilizers with proportionately much calcium in them are very beneficial. This may explain why one man gets good results with lime and another man gets little or negative results.

The hatching and care of chickens makes excellent spring lessons. Iowa has something over 2,000 boys engaged in a contest to see who can have hatched and saved, at the greatest profits, the largest number of chickens. All kinds of garden work make good spring lessons. Insects a little later, and plant diseases also furnish valuable material.

In schools where children make booklets on what they study in agriculture, I have known of boys reading 200 pages outside of school in order to learn what to do in their gardens. And I have known of boys writing 150 to 175 pages in order to get thirty or forty pages good enough for their booklets. I wonder if anyone is so blind as not to see that those children were learning to read, to write, to spell and to use good English, and learning much faster than they would have been in the old-time school with the old-time lessons taught in the old-time way.

State College sends out some splendid little circulars on such subjects as I have outlined above. The United States Department of Agriculture has bulletins which we may get in quantities large enough to have one for each pupil. These government bulletins are best gotten by writing your congressman. It costs nothing to introduce agriculture into a school. It makes the work more interesting, it makes a tie that unites home and school, and it enables the child to go faster in the other branches. In one county where agriculture was introduced and had been taught for three years there were over three times as many pupils who finished the eighth grade and went on to high school as there were before agriculture was taught.

A GOOD GENERAL FARM COMBINATION

Cows, hogs and sheep, backed up with a good apple orchard, make a mighty strong combination, and one that the most skeptical farmer can not afford to ignore. Where a dairy of 10 to more cows is kept, fed and cared for the year round, the farmer is assured of a steady income, and where a number of brood sows are kept and two litters of pigs per sow are raised, even tho the pigs are sold when from four to five weeks old, it means a nice income twice per year. But to the greatest gain and where the most money can be made is to furnish plenty of pasture for the pigs and grow them to six to eight months old, and butcher them and put them on the market when they weigh from 125 to 200 pounds each. When such porkers are nicely dressed, meat market men will buy them and pay highest market price. For the last three years such pigs have found ready sale at 10 cents per pound, which means from $12.50 to $20 per pig. That is making money mighty fast, especially if plenty of forage, such as red clover, alfalfa, rape peas and oats, and the run of the orchard during spring, summer and fall months is furnished. When the above forage is furnished, pork can be made very cheaply, with but little mill and a light bill for concentrated feeds.

I know of but few farms in this section but have some waste land that could be fenced and a small flock of sheep kept to good advantage. They furnish money twice to three times per year, as wool in spring, lambs during summer and mutton in the late fall and early winter. Then have the whole business backed up with a good apple orchard. Not only apples, but pears and plums and cherries, also all kinds of berries and a good income is assured. A good apple orchard is one of the best backers a farmer can have; it acts as a mortgage lifter, an insurance policy and a pension combined. Had I not planted an orchard years ago, I would not be writing this article now, as we have not missed an apple crop in 15 years. Our first crop brought us $150, and while that is not much, yet it is a lot of money when no other money is at hand to pay the interests and taxes.

If you are in the stock business, keep improving your stock by using pure bred sires and keeping the best heifer calves from the best cows, the best ewe lambs from the best sheep and the best pigs and shoats for breeding sows; and if you have no orchard, don't wait a minute, but look over the advertising columns of the Pennsylvania Farmer, get some catalogs of nurserymen and get some fruit trees and berry bushes.—Joseph E. Fischer, Tioga Co., Pa.

VALUE OF A MULCH

A few years years ago I had a forcible illustration of the value of a mulch presented to me in the garden. We had planted a few rows of early beans, and just as they were appearing above the ground we were threatened with a killing frost. As we were very anxious to save the beans, we covered them with boards. On one part of the plot the boards were dropped between the rows and on another part they were carried and piled to one side, when danger from frost was over.

This cold spell was followed by a two weeks' drouth. At the end of the drouth the bean plants where the boards lay between the rows were at least double the size of the ones where there were no boards between the rows. Where the boards lay the soil was moist, while it was dry and surface crusted where there were no boards.

The boards acted as a mulch and prevented the moisture from escaping into the air. Shallow cultivation acts in the same way, tho perhaps not quite as effective; however, it is a practical method of preventing the escape of moisture and for the destruction of weeds.—A. J. Legg, West Virginia.

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is what we are trying to furnish our customers. Free samples will show that we come pretty near doing it. All other field seeds. Also Field Peas, Soys, Vetch, Rape, Pasture Mixtures, Reid's Yellow Dent Corn, Etc.
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Think what this means on wet days and in damp places.

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Bass Shoes quickly adapt themselves to a perfect fit of every part of your foot, because of the choice, flexible, vegetable-tanned leather we use. The skins are from matured veal and have the advantage of being smooth, tough and fine-grained, and are at the same time soft and comfortable. Skins of young veal are not used by us, because their weak spots shorten the shoe's life by half or more. Steer hides cost less, but they are coarse-grained and can't resist water like the hides we use.

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Buy Bass Shoes of the best dealer in your town or the nearest town. They cost $4.00—a little more, perhaps, than ordinary shoes, but their *extra*ordinary features make them worth a *whole lot* more. If your dealer does not sell Bass Shoes, don't buy any others—write us and we'll tell you how to get them.

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You can easily net from 15c to 20c more on every sheep you shear with a Stewart No. 9 Machine. Don't labor with hand shears, in the old, hard, sweaty way. Don't have aching, swollen wrists. Don't scar and disfigure your sheep with uneven shearing and spoil the wool with second cuts. Take off the fleece smoothly and quickly in one unbroken blanket with a

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It's the most perfect hand operated shearing machine ever devised. Has ball bearings in every part where friction or wear occurs. Has a ball bearing shearing head of the latest improved Stewart pattern. Complete, including four combs and four cutters of the celebrated Stewart quality. PRICE $11.50. Get one from your dealer, or send $2.00 and we will ship C. O. D. for balance. Satisfaction guaranteed. Catalog of Sheep Shearing and Horse Clipping Machines FREE.

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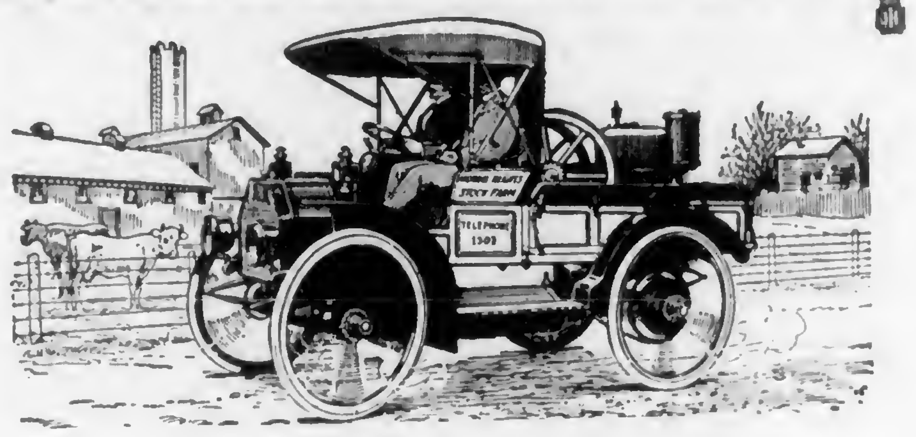

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You can take your cream, butter, eggs, vegetables, fruit, and other produce to market and bring back household supplies with an

International Commercial Car

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Solid rubber tires do away with all delays and trouble caused by punctures and blowouts. They reduce tire expense to the minimum. The wheels are high enough for ample clearance on muddy roads. The car has weight enough to give full tractive power for climbing hills. The motor is very simple, is oiled by an effective splash system, and is furnished either air or water cooled. Brakes are sure and powerful. A single lever controls the car and makes it so simple that anyone readily learns to run it.

Be sure to learn what this car will do for you. Let us prove to you that it is a profitable investment for you to make. Write for catalogues and any information desired.

International Harvester Company of America
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164 HARVESTER BUILDING CHICAGO U S A

Poultry

STARTING THE CHICKS

We are all busy now in hatching our next year's laying stock, and we must watch out for all of the little failures which lead to big failures later on. If we incubate, naturally great care must be taken in selecting the setting hens and the quarters in which they are to do their hatching. Their setting quarters must be away from the poultry, so they will not be disturbed, and the nest should be placed in a rather dark place as it is their nature to have their nests in a hidden place. The nests should be good and roomy. A nest that is rather flat in the bottom is far better than one that is too deep and narrow. It should be placed on a sound foundation so there will be no jar or motion. If the nests are placed up off the ground, there should be wet sand or earth placed in the box first, and then some nice clean litter on top of the sand. This wet sand will be necessary moisture to the eggs. Keep plenty of food and fresh water where they can get it, also a dust bath. When the hen is hatching, she should not be disturbed until the hatch is complete, and then she should be moved to the brooding quarters and the first meal of fine grit given. This should be fed 2 or 3 hours before any other food in order to start the gizzards working. A good first ration is 8 pounds of stale bread and 2 pounds of hard boiled eggs, which should be fed for the first three days, a little at a time and 7 or 8 times a day, so that the chicks will eat up their first meal clean in a few minutes and be ready for the next. From the third to seventh day gradually substitute a thoroly baked johnny cake, 8 pounds corn meal, 2 pounds sour milk, 12 eggs, 5 level teaspoons baking soda. If you test out the eggs on the seventh or eighth day the infertile eggs can be used if they are kept in a cool place. From the fifth day feed a little fine grain in the litter and feed johnny cake in shallow dishes or on flat boards. The grains can be of equal parts of fine cracked corn, cracked wheat and hulled cracked oats, and one-tenth millet seed. From the seventh day on a little mash should be fed, composed of 8 pounds wheat bran, 2 pounds fine beef scrap.

The best hopper is a little store box, 3 or 4 inches deep and a piece of half-inch mesh wire to fit inside and work up and down freely, so they can not scratch the mash out. Fill the box half full of the mash, and the wire will work down as they eat the mash out. After three weeks, gradually substitute from johnny cake to a mash of 100 pounds corn meal, 100 pounds wheat middlings, 100 pounds beef scrap and 200 pounds bran. Feed in hoppers. After six weeks whole oats can be fed instead of hulled oats. If the incubator is used, it should be placed in a well-ventilated room or cellar. It is best to follow the direction of the manufacturer of the incubator. The best way to find out if the eggs are drying down too fast is to set a hen the same time, and test an egg under the hen at different times to see the size of the air cell in the egg, and go by that for your incubator. A false window is a great aid for the incubator and brooder house. It will keep a great deal of cold out and makes it easier to test eggs in the day time and darken the room when eggs are hatching. The false window also makes it possible to hold a more even temperature.

Felt or rubber roofing is the best material for these windows. Tar paper is sometimes used but is not as satisfactory.—B. S. Banks, Pike Co., Pa.

AUGUST CHICKS

Seldom do I see any reference to the hatching of chickens in August. In a small way I have tried doing this repeatedly and almost always have had success. In the latter part of July or early part of August I always have some broody hens. These I set hatching the latter part of August. When several weeks old, vegetation being on the decline and the farmer not so particular about his crops, I let the hen and chicks run. In this way they pick up a good deal of their food, a saving of not only food but labor.

They should be securely housed at night on account of the heavy dews which come at this time of the year. If the fall is a dry one, it is surprising how fast they develop. Seldom have I had a case of gapes at this time of the year. My aim is to have broilers by Christmas, but this season I had three pound roasting chickens by December.

I choose a heavy, meaty chicken, such as Plymouth Rock or Rhode Island Red. The pullets can be saved so as to have laying hens at the time of the year when winter and spring layers have almost stopped laying, but I believe it pays best to market them with the roosters, as a quick turning of money is more business like.—Mrs. Louise P. Burkhart, Bucks Co., Pa.

INCUBATOR CHICKS

We read a great deal about incubator chicks, and while too much can not be said relative to their feeding, what they should drink must be considered. Sweet skimmed milk, warm and with a little black pepper, makes a very satisfactory drink for the young chicks. If the milk is not available, warm water should be given. The drinking fountain or dishes must be kept clean always. Washing them twice a day is necessary at first, since fouled water is very harmful.—A Farmer's Wife.

POULTRY

BABY CHICKS

Thoroughbred Single Comb White Leghorns, Wykoff and Young's strains crossed. Safe delivery guaranteed of strong and healthy chicks from best trap nested winter layers. We make a specialty of winter eggs, hatching from best layers and best shaped birds only. Place your order with us for your next Winter's Layers. $10 per hundred, or 10c each for 25 or more. Write
SHENANGO VALLEY POULTRY FARM,
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BUFF ROCKS

The great winter egg machines. For balance of season will sell eggs from this grand breed at $1.00 per 15, $5.00 per 100.

BARRED ROCKS AND WHITE WYANDOTTES

A few settings from extra fine birds at $1.00 per 15.

JAMES Q. MYERS,
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"Red Quill" Rhode Island Reds, both varieties, White Leghorns, White Cornish, Partridge Wyandottes, Indian Runner, Pekin and Rouen Ducks. Ohio State show 1913, won nine awards on 11 entries. Only high class stock, eggs to set, prices reasonable.
Cary's Poultry Farms, Trimble, Ohio.

S. C. Pure White Leghorns. Extra fine quality. Eggs for hatching five dollars a hundred or one dollar for fifteen; day old chicks 10 cents apiece. Send orders early to
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Fawn and White Indian Runner Ducks—Prize winning S. C. R. I. Reds, Barred Plymouth Rocks, the greatest of layers. Order your eggs now.
DAVID M. HAMMOND, Cortland, N. Y.

EGGS for Hatching of White Indian R. D. (Fishels strain.) Also Fawn and White, Harshbarger's strain white egg layers. Circular free.
J. S. WILE, Route 1, Telford, Penna.

Single Comb White Orpingtons, eggs for sale, $1.50 per 15; $10.00 per 100. Fine pure white birds. The Alba strain. Address
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Barred Rocks, Bred in the very best blood lines. Eggs, $1 per 15 or $4.00 per 100.
CHAS. T. DOWNING, Rt. 2, West Chester, Pa.

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INDIAN RUNNER DUCKS, S. C. R. I. Reds. "The mortgage lifters." Free booklet.
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Indian Runner Duck Eggs. Prices Reasonable. Write.
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Buff Orpington Eggs, 15, $1.00; 50, $3.00; 100, $5.00. White Holland Turkey Eggs, 9, $2.50; 18, $4.50. W. A. LOTHERS, Peru Lack, Pa.

Registered DUROCS, all ages. Rhode Island Red Eggs, 17 for $1.00 or $4.00 per 100.
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EGGS FOR HATCHING from S. C. Buff Leghorn and Harshbarger strain of fawn and white Indian Runner Ducks. C. C. Rodway, R. D. 39, Hartly, Del.

Buy eggs from world's best laying strains, Fishel W. R., $1 per 15; 100 $5; Blaker's W. H. Turkeys $3 for 10; C. E. Cassel, R. D. 3, Middletown, Pa.

Famous Laying Strain S. Comb White Leghorns or Barred Rocks. Eggs $1 setting, $3.50 hundred. Paradise Poultry Farm, Paradise, Pa.

High-Class Barred Plymouth Rock Eggs for hatching. (C. H. Latham's strain.) Cir. free. J. Bradford Opie, Neshanic Station, N. J.

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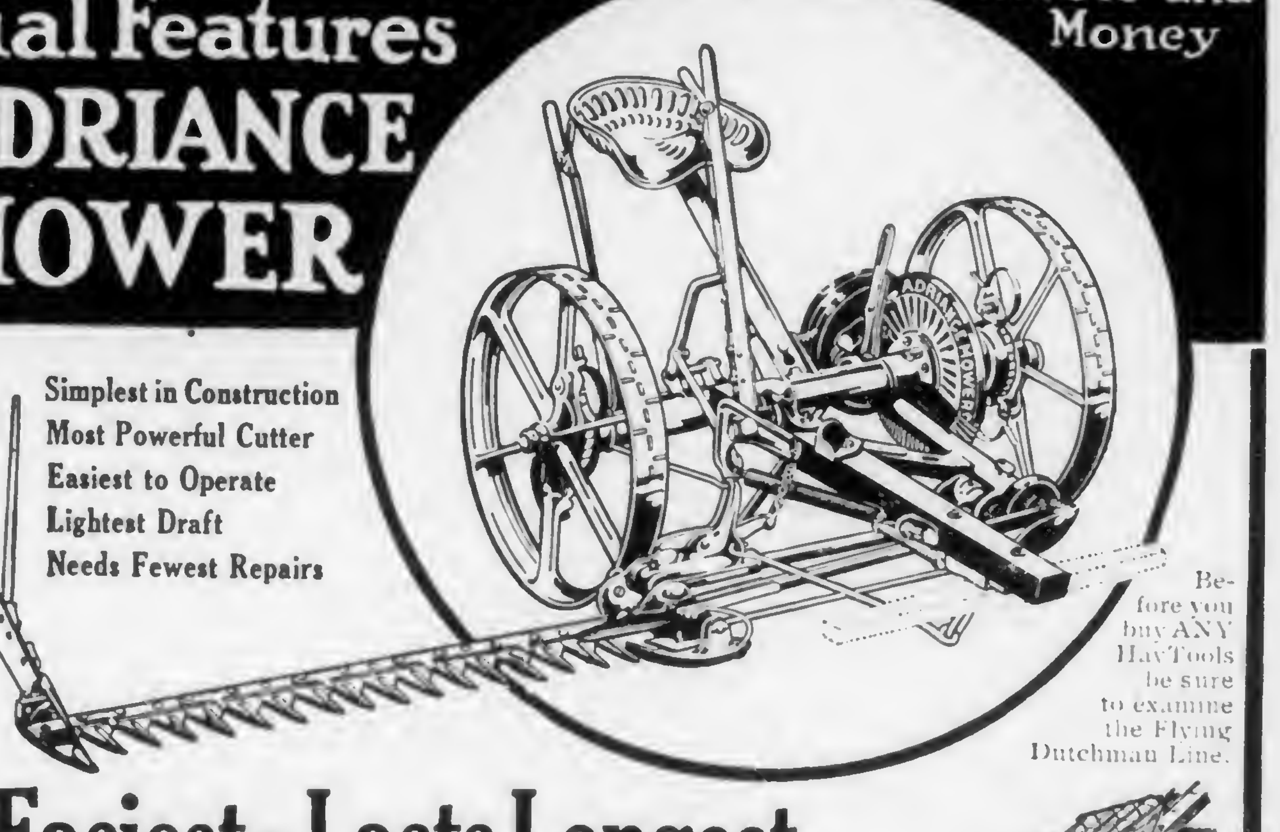

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Before you buy ANY Hay Tools be sure to examine the Flying Dutchman Line.

Runs Easiest—Lasts Longest

Lower the Adriance Cutter Bar and you quickly see why it is so flexible—why it runs so freely and always follows the ground. No matter how uneven the land is there can be no binding because the hinges of the Coupling Frame are in exact line with each other. It swings like a door. See how much out of line are the hinges of some other mowers.

When Cutter Bar is lowered Coupling Frame and Cutter Bar are both sustained by an adjustable Spring which transfers their weight from the ground to the wheels—lightening the draft and increasing the power.

Adriance Pawls and Ratchets are strong and substantial. There's no danger of their breaking. But if they should, they could not cause any trouble, because they are open in plain sight. You can always see that they are working right. Have you ever had to buy a new wheel for a mower because a broken pawl ground out a ratchet before you could locate the trouble? That never occurs with an Adriance.

See how evenly balanced the Adriance Mower is. Hold up the tongue with two fingers while someone else sits in the seat. Look away from the machine and see if you can tell when the Cutter Bar is raised and lowered. Then try the same test with any other machine.

The Foot Lever raises the Cutter Bar with a natural forward movement of the foot. Not only is it easy to operate, but it helps to brace you in your seat. Contrast the ease and safety of this foot lever with downward acting foot levers. Even if your team isn't skittish you'll like the Adriance Foot Lever the best.

Never any clogging or dragging with the Adriance. Scythe starts cutting the instant the wheels move. See if this is true of any other mower.

Notice how the Cutter Bar folds up over the tongue. It only takes a moment to raise or lower it—no bolts to fasten. It is more secure—no taps to come loose. It cannot drop and scare the team. The Adriance Mower has many other valuable features. It is impossible to give even a brief description of them all in this small space. Some of the others may be of greater importance to you than the ones we have named.

Look for the Flying Dutchman Dealer

There is one near you. He will gladly show you an Adriance Mower and explain its many advantages—or, if you will send us your address on a postcard, we will mail you a very interesting illustrated descriptive booklet containing a big picture of the Mower in its natural colors. As the supply of these booklets is limited, please write today if you wish to be sure of getting one.

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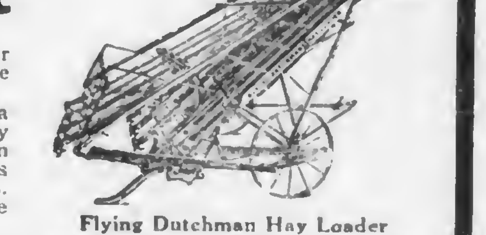

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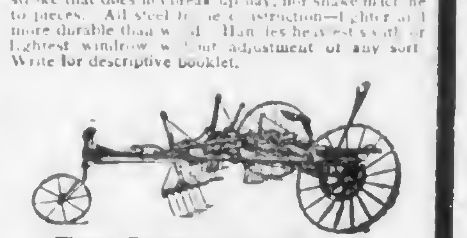
Positively the best in every particular. Driven direct from axle, without chains, sprockets, cogs or gearing of any sort—nothing to lose or break. Has long slow stroke that does not break up hay, nor shake much [illegible] to pieces. All steel [illegible] construction—lighter and more durable than wood. Handles heaviest swath or lightest windrow without adjustment of any sort. Write for descriptive booklet.



Flying Dutchman Side Delivery Rake and Tedder

It's a rake all the time and a tedder when you need it. By buying this convertible Rake and Tedder you save the price—and the storage room—of one tool. To change from the Rake to Tedder, or back again, it's only necessary to take out one bolt, shift the gears and reverse the forks. You can do this in five minutes. Write for descriptive booklet. 406

Moline Plow Co., Moline, Ill. Eastern Branch: Adriance, Platt & Co., Poughkeepsie, N.Y.

The Place of the Tomato in Crop Rotations.

By Prof. C. A. McCUE, Delaware Experiment Station.

The tomato, as grown for canning purposes, occupies the land approximately from the last week in May until the first or second week in October. In the extreme southern part of the state the crop is often disposed of by October 1. Over the greater portion of the state the fact that tomatoes may be set as late as June 1 gives the planter an opportunity to grow other quick maturing crops before the land is needed for tomatoes. If hay is needed, crimson clover may be sown in the fall, cut for hay the next spring, and the land then prepared for tomatoes. When a pea cannery is available, a crop of cannery peas may often be grown before the tomato crop. Crimson clover may be sown in the tomatoes at the last cultivation and used either for hay the next spring or turned under as a soil renovator. However, the point to be established is what crops may be best grown before the tomato crop and what afterward?

The tomato leaves its vines and roots upon the land, and they contain no insignificant amount of plant food that is readily available for the succeeding crop. The roots and top contain more fertilizing elements than do most other crops. Patterson gives the following figures to support this contention. (Md. Bulletin 11.)

BOXED TOMATOES READY FOR SHIPMENT.

TABLE 1.

Valuable Fertilizing Elements in Roots and Stubble of Various Crops Left in One Acre of Land.

Plant	Roots and Stubble pounds per acre	Nitrogen pounds	Phosphoric Acid pounds	Potash pounds
Tomato	8,999	27.3	1.1	33.9
Cowpea	1,676	22.6	5.9	11.5
Wheat	2,210	31.1	7.0	8.1
White Potato	2,000	8.6	3.2	9.8

From the above table we can see that the tomato is not an exhausting crop when compared with other crops. The roots and top contain more fertilizing elements than do most other crops. From the standpoint of economic soil management the tomato is a good plant to grow.

The tomato needs a large quantity of readily available plant food during the latter part of the growing season, and a soil condition that will keep the plants well supplied with moisture, especially during the latter half of the season. Conditions that best meet this latter requirement are found when sod land has been turned for the crop. If lands other than sod lands are to precede the tomato, they had best be land that have grown legumes. Wheat is an especially good crop to follow the tomato when crimson clover is not needed for building up the soil. One grower writes, "I always sow my tomato ground in wheat. I find that I can get one-third more wheat than I can on stalk ground. I then sow timothy and clover in my wheat and get one-third more hay."

It seems to be the general experience of Delaware tomato growers that tomato land makes excellent wheat land. In this state the tomato crop is off the land sufficiently early for the proper preparation of the land for the wheat crop. The tomato leaves the land in such a good mechanical condition that the young wheat plant thrives and grows vigorously.

The tomato is not usually grown in as large acreages as are other crops, and this fact, in a way, complicates the problem of finding its proper place in the rotation. It fits in well, however, with all types of farming, and is, as will be shown later, a paying crop where ready cash is needed.

For a farm where wheat and corn are the principal crops, and where red clover can be grown, the following rotation is suggested: First year, corn, crimson clover. Second year, tomatoes. Third year, wheat. Fourth year, red clover.

Such a rotation gives a sod land for the corn crop, and if crimson clover is sown in the corn at the last cultivation, a good crop of clover may be turned under for the tomato crop. This practice tends to maintain the humus and nitorgen content of the soil. If the entire acreage is not needed for tomatoes each year, a portion of it may be used for soy beans or cowpeas.

When wheat is the principal crop, the rotation may be tomatoes, wheat, red clover, plowing under the clover sod for tomatoes, or where pasture is desired the sod may be left for one year before turning.

In those sections where it is difficult to secure a stand of red clover and corn and wheat are the principal crops, a shorter rotation of three years may be used, i. e., first year, corn, seeded to crimson clover; second year, clover turned under for tomatoes; third year, wheat, seeding to crimson clover in August after the wheat is off. The clover may be either cut for hay the following spring or turned under for the corn crop. Such a combination not only furnishes the much needed sod for the corn crop, but prevents soil depletion by the use of catch crops of crimson clover.

Where corn is the main crop, the tomato crop may be worked into the rotation in the following manner. First year, corn seeded to crimson clover; second year, crimson clover turned under and tomatoes set, followed by crimson clover in the tomatoes; third year, cut the crimson clover for hay and sow cowpeas or soy beans for hay, following in the fall after the beans, or peas, with crimson clover, and plow down in the spring for corn.

If a shorter rotation is desired, the corn may be seeded to crimson clover, the clover turned under the following spring for tomatoes, crimson clover sown in the tomatoes to be turned under for corn the next year, thus making a two year rotation of corn and tomatoes, with two catch crops of crimson clover.

One of the chief difficulties in working tomatoes into a crop rotation for the corn and wheat farmer is the fact that it is seldom if ever desirable to grow an acreage of tomatoes equal in extent to the acreage of wheat and corn. In such cases it can be remembered that cowpeas or soy beans may be planted in the rotation in the same place that the tomato occupies. The late potato may be used on occasion, but generally wheat does not do as well after potatoes as after tomatoes. It is suggested that upon those farms where ten or more acres of corn or wheat are grown each year, that only a portion of the ten or more acres be set to tomatoes, and that soy beans or cowpeas may occupy the remainder.

In those portions of the state where the strawberry is the principal crop grown, and it is desired to grow the tomato in the strawberry rotation, the following sequence of crops is suggested. For a specific example, we will consider that it is desired to pick twenty acres of strawberries each year. Forty acres of such a farm could be divided into four fields of ten acres each and handled as follows:

Field No. 1: First year, young strawberry bed set in April. Second year, strawberries, first pick. Third year, strawberries, second pick, followed by crimson clover or cowpeas. Fourth year, crimson clover turned under, followed by tomatoes; seeded to crimson clover.

Field No. 2: First year, strawberries, first pick. Second year, strawberries, second pick, followed by crimson clover or cowpeas. Third year, crimson clover turned under for tomatoes, followed by crimson clover. Fourth year, young strawberry bed, set in April.

Field No. 3: First year, strawberries, second pick, followed by crimson clover or cowpeas. Second year, crimson clover turned under, followed by tomatoes, followed by crimson clover. Third year, young strawberry bed, set in April. Fourth year, strawberries, first pick.

Field No. 4: First year, crimson clover turned under for tomatoes, seeded to crimson clover. Second year, young strawberry bed, set in April. Third year, strawberries, first pick. Fourth year, strawberries, second pick, followed by crimson clover or cowpeas.

In those strawberry growing sections where canning peas are grown, the above rotation may be modified by sowing soy beans or cowpeas for seed or hay after the old strawberry bed is plowed up, and then putting the soy bean or cowpea stubble land into cannery peas in March. The peas will be out of the way in sufficient time to put tomatoes upon the land. The tomatoes are to be seeded down to crimson clover at the last cultivation. In such a rotation it is possible to take fifty acres of crops from thirty acres of land each year.

Mr. Horace Roberts, of Morristown, N. J., has been very successful in using the tomato as a companion crop for strawberries the first year of the strawberry beds. The strawberries are planted in rows five feet apart and a row of tomatoes is set between each two rows of strawberries. This method enables him to derive a good revenue from land that would otherwise be non-cash producing for the season. This method of combining the two crops is entirely feasible and will result in financial gains for the grower. The method will also be much more successful upon loam soils than upon heavy clays. On the heavier soils the tramping incident to the gathering of the tomato crop might be detrimental to the young strawberry plants. However, Mr. Mr. Roberts assures us that he has grown tomatoes in this way on heavy soils and has never noted any ill effects upon the strawberry crop.

If this combination of crops were used in the rotation last given, it would add 10 acres more of tomatoes to the yearly harvest and all fields given in the rotation would produce one or more money crops each season, and it would be possible to harvest sixty acres of crops from thirty acres of land each year.

From the answers given by 340 tomato growers in the state, the following facts may be derived: 110 growers precede the tomato crop by what may be classed as a sod; 73 turn under a crop of crimson clover; 96 use corn stubble; 27 use wheat; 28, cowpeas, and the remainder by various crops. One of the most striking facts brought out, however, was that out of the 96 who grew corn before tomatoes, only eight seeded crimson clover in the corn at the last cultivation.

From the experience of the same growers, it was learned that 133 followed tomatoes with wheat; 69 with crimson clover; 25 with corn; 6 with crimson clover and corn; 7 with strawberries, and the remainder with various crops, such as canning peas, cowpeas, soy beans, potatoes, timothy, etc.

May 3, 1913

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The Cultivation and Fertilization of the Orchard.

By SHELDON W. FUNK, Berks Co., Pa.

After the trees have been set, the next problem which confronts us is the treatment of the soil. How, under our particular conditions, are we going to secure the greatest amount of growth in the most economical way? There are two general systems practiced by orchardists, which, when handled properly give the desired results; they are the sod mulch system and the clean culture system. There has been much discussion pro and con regarding these two methods; some men have had excellent results with the one method, while others have succeeded equally well with the other system. The beginner in the orchard business may be in quandary as to just which method he should adopt. In answering that question I would say that he should first select that system which, in his estimation, would be most suitable under his conditions, and then carry it out religiously, practice every detail which tends toward your end. Success depends not so much upon the system as upon the thoroughness and intelligence with which the work is performed. I have seen both systems tried side by side and give equally good results. Personally the slope of the orchard, the soil and the fertilization problem would decide the question almost entirely.

In planting on land which is very rolling and inclined to wash badly, I would use the sod mulch almost from the beginning of the orchard. On sod which is not inclined to wash I would use the clean culture method, together with a good system of cover crops entirely, until the ordchard had reached the bearing age. Although trees usually make a fairly good growth the first year when set in sod, I prefer cultivating several feet on both sides of the tree the first season, so as to give them a little better start, and then begin mulching the second season.

It is not sufficient that we spread a light coat of dried grass or leaves or some other foreign material under the trees, but it should be applied so thickly that no grass whatever can penetrate the mulch and thereby rob the tree of its moisture. This holds good practically with the young trees where we would secure a maximum growth, when the trees become larger it is almost impossible to maintain this heavy mulch on account of the immense amount of material required. Try and keep a good stand of grass between the trees, as much clover as possible, and then cut about twice each season, spread the first cutting around the trees as the mulch and allow the second cutting to remain where it falls.

The ordinary man will receive the best results under the clean culture system and I would recommend it where it is at all suitable. The first couple of years, even in an ordchard planted with fillers, there is considerable space not used by the trees in which some cultivated crop may be grown and help pay the expense of the orchard. Almost any cultivated crop will do very nicely, with the possible exception of corn. I know many men have good results when corn is used in the young orchard, however, I do not like it, for the simple reasons that it grows so tall as to cut off the air and sunshine supply from the small trees. And again, corn is a very vigorous feeder and is hard on the humus supply of an orchard.

The orchard should be cultivated both ways about every two weeks until some time in July, when it should be sown to a cover crop. Do not cultivate deeper than from 3 to 4 inches. Use this method of handling the orchard for the first seven or eight years, and then when you want your trees to come into full bearing it is well to throw them into sod for several years; this checks the wood growth and tends to develop fruit buds. After the bearing habit has been established, you can continue your clean culture and cover crop system, or, if you wish to dispense with the cover crops, keep the orchard in sod about two years out of every five, so as to keep up your humus content.

Crimson clover, hairy vetch and rye are about the best cover crops to be used in this state. Crimson clover will do very well for southern Pennsylvania, but freezes out when grown farther north. I have less trouble with the freezing out of the crimson clover when a small amount of rye is sown with it. Hairy vetch is the best of all cover crops, but at the present price of seed it is a question whether or not we can afford to use it. I would only use rye in the orchard when you can not use the legumes, and then be careful to turn it down in the spring, not later than when it has reached a hight of 12 or 15 inches.

(To be continued.)

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TIGHT BINDING

Large Milk Producing Establishment.

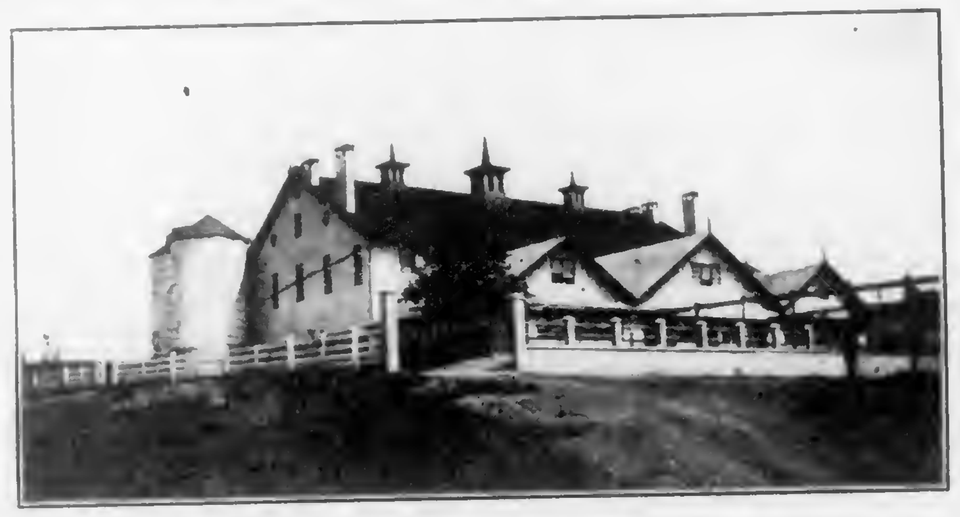
By F E. IRWIN, Cumberland Co., Pa.

A short distance out of Harrisburg, in Dauphin County, is located Bonnymeads Farms. These farms comprise an area of two thousand acres of tillable land. The live stock consists of 12 horses, 40 mules, 150 cows, 90 head of young cattle and a flock of sheep. The 40 mules are kept to do the farming, which is quite extensive for a Pennsylvania farm. Fifty-one people in the winter and about 60 in the summer find employment here. Straw for bedding, corn for the silo, alfalfa and other forage crops used on the farm are of home production. Large amounts of grain are produced, as high as 8,000 bushels of wheat being sold from these farms in one harvest. The tillage of the land, the growing crops, the housing and pasturing of the young cattle and the shepherding of the sheep are all intensely interesting phases of the doings at the Bonnymeads Farms.

The object of greatest interest to most people, however, is the long rows of milk cows in the dairy barn. A gently sloping hillside was chosen for the location of this barn. The foundation for the building is 100 x 100 feet. Under this single roof is an office room, a reading room for the help, a cold storage room, a milk room, 26 x 26 feet, a wash room 20 x 30 feet, and stabling for 140 cows. Most of the milking herd are pure-bred or high-grade Holsteins. Guernseys are kept to make about one-seventh of the patrons' milk. A reserve of cows coming fresh are kept at other barns to keep the number milking at approximately 140 head. The calves to be grown are taken while only a few hours old to a barn built exclusively for housing calves. The feeding of these calves is not every ones' job. One man, well versed in the mysteries of "calfdom," is delegated to do the feeding and look after the general welfare of the youngsters in the infant department. At the proper age they are taken to the pasture field or to the barn for growing stock.

The dairy barn and the other buildings in this group all have a complete system of ventilation and are lighted by electricity. The floor and mangers are of concrete. The cows are fastened with steel stanchions and have water constantly before them in automatically filled water boxes. The manure is carried direct from the stable in carriers, operated on steel tracks running out some distance from the barn. Men with teams distribute this manure to the parts of the farm needing a fertilizer. Numerous windows admit an abundance of sunshine during the day. During the summer months the cows are out of the barn, except while being milked and fed.

Tuberculin testing is practiced when cattle are bought or sold. In order to insure constitutional vigor and satisfactory results at the milk pail, high class bulls are kept at the head of the herd. Stonyford Pontiac Hendric, No. 73036; Major Allen Butter Boy, No. 40086 and Lilith Paul Dekol Paul, No 50835 are the illustrious sires on the farm. The visitor, after observing the size and conformation of the individual cows in this stable very naturally concludes that they are all good. By weighing the milk of each cow daily, the overseer is able to point out the good cow, the better cow and the best cow. Among the number winning the red and blue ribbons is one that gave 16,000 pounds of milk last year. Nellie Vashta DeKol, No. 118987, with her first calf, is crowding close to first place, as she made a yearly milk record of 15,231 pounds. The average yearly record for the herd, including heifers with first calf, is close to 10,000 pounds per head. One cow in the barn is 17 years of age, is looking well and doing good service. The grain ration of the dairy cows is composed entirely of purchased feeds, which are brought in in carload lots. A railroad siding permits unloading the feed at a storehouse erected for the purpose.



DAIRY BARN ON BONNEYMEADS FARMS, DAUPHIN CO., PA.

Twice daily the cows are carded and brushed. Before milking the udders are thoroly washed. As an additional precaution against the entrance of filth and bacteria, closed top pails are used by the milkers. The milk when drawn from the cow passes thru a fine adjustable strainer placed in the small opening in the top of the pail. The milk is strained once more thru a strainer attached to the receiving vat. This oblong vat is placed in an aperture in the wall, midway between the milk room and a small room where the milk is strained. Between the straining room and the stable there is another room thru which the milker must pass before reaching the milk vat. The entrance to these rooms is by swinging doors.

After the strained milk enters the milk room it is handled entirely by machinery until in the bottle ready for market. The process for cooling the milk is the direct expansion method or by ammonia gas. The cold storage room is kept at the proper temperature by the same method. Milking begins at three o'clock in the morning. The milk is handled with such precision and dispatch that it is cooled and bottled in from 10 to 15 minutes after coming from the cow. A comparatively small amount of milk is separated—the cream sold to the patrons and the milk fed to the calves. By five o'clock the five milk wagons are loaded and on the road to market at Steelton and Harrisburg.

This dairy establishment has many visitors. Those who come expecting to see palatial buildings, beautiful lawns and picturesque driveways are apt to be disappointed. Two years ago the buildings were erected, and the primary object of builders seemed to be to secure durability, convenience and sanitary requirements. The purpose of the management seems to be to furnish every inducement for both man and beast to do their best. No doubt the reader has in mind the question, is it a success? The bacterial count of the milk from this dairy seldom exceeds 10,000 per cubic centimeter. The business has surely been a success so far as purity and quantity are concerned. The manager also declares that it is a profitable investment.

A straight from the shoulder message to separator buyers

Beware of separator salesmen who claim that their machine is "just like the De Laval" or "as good as the De Laval."

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It is unfortunate that the separator business should be burdened with such unfair business methods but since it is it behooves every prospective separator buyer to use care and good judgment in the selection he makes.

Look well to the demonstrated ability of the concern that makes the machine to build a good separator. Avoid buying a machine whose makers have had little separator experience, or who are constantly changing from one makeshift type to another.

Talk with separator users who have learned by experience.

The more you investigate the more you will find that there is one and only one separator that stands in a class all by itself.

It was the pioneer cream separator in 1878 and it has been first ever since.

You will find that more machines of this make are being sold than all other makes combined.

You will find that 98 per cent of the world's creameries use it exclusively.

You will find that every user of this machine is a booster.

You will find that its makers are so confident of its superiority that you may have a free trial of it alongside any other machine and judge for yourself as to which machine will serve you best.

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EVOLUTION IN BUTTER MAKING

When we commenced making butter to sell many years ago, there was no railroad or other public means of transportation nearer than thirty miles. Hucksters generally came along in the fall about October and bought butter which they disposed of in the coal regions of Pennsylvania.

We strained our milk into eight-quart pans, placed on slatted shelves to the depth of about one and a half inches. The slatted shelves were for the purpose of letting the air circulate under the bottoms of the pans to make the milk cool quicker and having the milk shallow in the pans was for the same reason. We knew that the quicker the milk could be cooled, the larger the quantity of cream that would be raised. There were no cream separators in those days, and the deep-setting cans using ice water had not yet made their appearance.

Some of our German neighbors who had spring houses over their cold springs, strained their milk into deep earthen crocks and set them into their springs to cool. We knew their method was better than ours, but we did not have the cold spring.

When the deep-setting cans came into use we procured them and set our milk in a tank full of ice water and ice. More cream was raised by this method, and the skim-milk was sweeter to feed to calves. More than this, the tank could be kept in the pantry without having to travel up and down the cellar stairs. Soon after this there was a creamery established near-by and we sold the cream and kept the skim-milk to feed to calves and pigs, and this became our established practice. We still believe that no other method of dairying will preserve the farm so well as this. After the railroad was built, most of our neighbors sold their milk to be shipped away to the city, and, of course, received more money for their whole milk than we did for cream, but they had to take their cans to the station every day (Sundays not excepted), and they had no skim-milk for their calves.

About this time I visited a fried in Illinois and found him turning the crank of what I call a barrel churn. I requested the privilege of "spelling" him, which was willingly granted. It turned hard because it was not round, and turned end over end with the cream falling back to be turned up again. None of his cows being fresh, it took over half an hour to get the butter "to come," but it was good when it did come, and that was some compensation for the arm ache.

My friend's wife said that her husband wanted to sell all the cows except enough to supply the family needs for butter and cream, but she thought it only required a little more work to keep all their cows and have some butter to sell. Both were right from their own viewpoint. My friend did the milking and churning, and it made considerable difference in his share of the work. His wife strained the milk and skimmed it, and salted and worked the butter. It did not make so great a difference in her share of the work.

On the opposite side of a small river, only sixty rods distant from my friend's house, there was a creamery, with steam power to drive separators, churns, butter workers and all the modern labor-saving machinery for making butter on a large scale and at a low cost. Two men and a boy could weigh the milk, strain it, separate the cream, churn, work, salt and pack a thousand pounds of butter in a day. They offered to take the farmer's milk and pay for the butter it would make within four cents per pound of the highest price quoted in Chicago; or, they would buy the milk at so much per pound as the price of milk at different seasons in the market warranted. It seemed to me that my friend and his wife were making a mistake in not patronizing the factory. They were no longer young, and had they been ever so youthful, they could not afford to make butter for four cents a pound, which is all they got for their labor.

For years past the tendency of the times has been to do more and more of the world's work by machinery. Experience has proved that work can be done by machinery and associated labor in factories cheaper than by individual enterprise. Where such means are available, few farmers now find it practical to make their own butter.—J. W. Ingham, Bradford Co., Pa.

A TON OF BUTTER FROM THREE COWS

The Kansas Industrialist reports on a record just completed by The Owl's Design, a pure-bred Jersey cow owned by the Kansas Agricultural College. In the twelve months ending March 17 she gave 14,606 pounds of milk and 653 pounds of butterfat, which is equivalent to 758 pounds of butter. The world's Jersey record is 17,253 pounds, which shows the extremely high standing of The Owl's Design. Her ration during the last year has consisted of alfalfa hay and silage, with a grain ration of 4 parts corn, 2 parts bran and 1 part oil meal.

There are now three cows in the dairy herd at the Kansas College whose combined yearly records total over one ton butter. In addition to "The Owl," as she is called, with her record of 14,606 pounds of milk and 758 pounds of butter, the college also has Maid Henry, a pure-bred Holstein, with a record of 19,600 pounds of milk and 835 pounds of butter, and College Maud, a pure-bred Ayrshire, with a year's record of 13,727 pounds of milk and 622 pounds of butter. Thus these three cows have a combined production for one year of 47,933 pounds of milk and 2,215 pounds of butter, an average of 15,978 pounds of milk and 738 pounds of butter for the year.

All of which may emphasize, The Industrialist says, the fact that, with good care, and the feed that any intelligent farmer can provide, dairy cows are a good asset. The cows at the agricultural college had no extraordinary rations. There was no secret system—there never is in good dairying. Care and kindness and common sense, with proper foods; given these, and the proper kind of cow will repay every dollar you spend for her.

Ayrshire Records. During the past year the Ayrshire Breeders' Association, thru the advanced registry test, supervised by experiment station, has brought out three cows that have each given over 20,000 pounds of milk. These include Jean Armour, bred in Canada, and owned by Mrs. Erhardt of Vermont; Gerranton Dora 2d, bred in Scotland, and owned by Mr. Clise of Washington; Lily of Willowmoor, bred in America, and also owned by Mr. Clise. This is a record of tenacity to breed characteristics under varying environment that speaks well for the breed.

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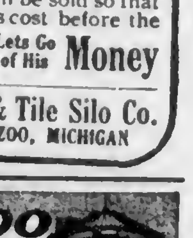

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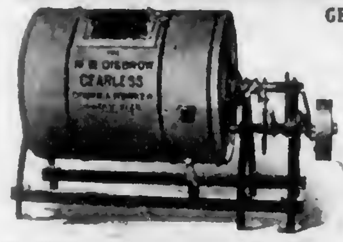

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Pasture For Swine.

By Prof. B. O. SEVERSON, State College, Pa.

This is the season of the year when the farmer who raises hogs should hold in mind the care for his pigs during the spring and summer. The importance of getting pigs to grow vigorously and develop continually from time of birth and until of a marketable age, is fully recognized by every successful swine breeder.

March and September are the two months of the year most favorable to the farrowing of pigs. These two months afford the production of two crops each year, come at a time when the weather is not extremely hot or cold, and afford a good opportunity of taking advantage of pasture on which to keep the breeding herd and to develop the pigs for market. Another advantage of these two months should be held in mind by the breeder of pure-bred swine, because the shows and fairs classify swine with reference to age from the first of March and the first of September of each year.

Pigs dropped in March should be placed on pasture with their mothers as soon as possible, for exercise is important in keeping them thrifty and growing rapidly. The sow should be fed a ration which will stimulate milk flow, because the young pigs depend upon their initial development from that source. A ration composed of five parts corn, 2 parts wheat bran and 1 part tankage, by weight, is a good ration for a brood sow. The amount to be fed is governed by the number of pigs in the litter, the condition and the weight of the sow. A sow, while raising her litter, should receive from 2 to 2 1-2 pounds of grain per 100 pounds live weight. When skim milk is available, it can replace the bran and tankage, being fed at the rate of 4 pounds skim milk to one pound of corn. The sow should have access to a mixture of ashes, salt and lime, mixed up in a meal and left in a convenient place for her to consume at will. The pigs should learn to eat three or four weeks after farrowing by eating from the trough with their mothers. At this time, a creep should be provided, so that the young pigs can eat grain by themselves; in this way they will be thoroly able to care for themselves when weaned at the age of eight weeks.

The importance of pasturing pigs and brood sows for the better physical development of the pigs and the greater economy of their gains and maintenance is not recognized in its fullest extent. The Ohio Experiment Station has reported interesting results in its Bulletin No. 242. The following table is a summary of one experiment contained therein:

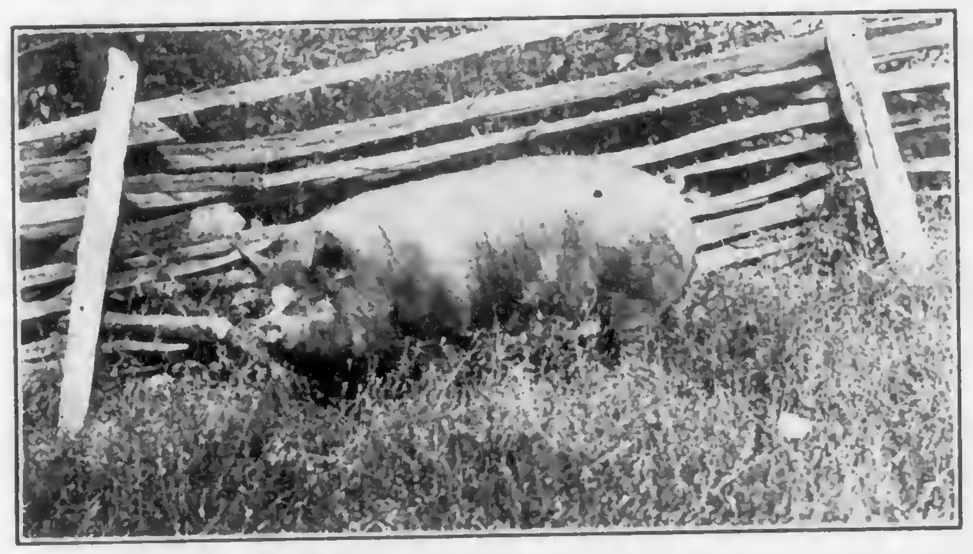
Lot	Ration	Daily Gain Per Pig	Concentrates Consumed Per 100 lbs. of Gain	*Replacement Value Per Acre
1	Corn 9, Tankage 1 (Drylot)	.79 lbs.	386.6 lbs.	
2	Corn, Tankage (Soy Beans) Pasture	1.08 lbs.	329.3 lbs.	$22.87
3	Corn, Tankage, Rape Pasture	1.01 lbs.	275.8 lbs.	32.13
4	Corn Alone, Rape Pasture	.95 lbs.	283.4 lbs.	35.22

*Based on corn at 56 cents a bushel and tankage at $18 a ton.

This experiment shows conclusively that grain on pasture is greatly superior to the same grain ration when fed in the dry lot. As indicated by the daily gains of pigs, being only 0.79 daily per head in the dry lot when fed a ration of one part tankage with nine parts corn, as compared with the same ration on soy bean pasture, with a gain of 1.08 pounds and 1.01 pounds on rape pasture. In lots 3 and 4, the value of tankage on rape pasture is compared. Experiments have proved that tankage is a cheap source of protein. This experiment shows, however, that when a green forage crop, such as rape, is used, the economy of feeding corn alone to fattening pigs is slightly greater than where tankage alone is used. It will be noted, however, that the gains were most rapid in the lot receiving tankage. One may be safe to conclude that when green forage crops are used for pasture, and especially legume crops, that the protein is supplied by the crop in sufficient amounts to allow the amount of protein fed in the grain rations to be materially decreased in feeding hogs for market.

Other crops which are used as permanent pastures are blue grass, mixed grasses, consisting of timothy, white and red clover, and alfalfa.

The question is often asked, "Can alfalfa be profitably pastured by hogs?" Where alfalfa can be grown and a good stand procured without too much expense in maintaining a permanent stand, then it can undoubtedly be considered a profitable pasture for hogs. This statement is based on experimental evidence reported by the Nebraska Station and as shown by practical results obtained by farmers in some sections of Pennsylvania and in central western states.



A BERKSHIRE GILT DEVELOPED ON PASTURE FOR BREEDING PURPOSES.

Where permanent pastures are not available, forage crops should be used. Such crops are rape, soy beans, oats and peas, rye and corn.

A crop rotation for hog pasture, used extensively in sections of the central west where pork production is considered one of the principal farm operations, is as follows:

First Crop.—Winter rye, sown in the latter part of August at a rate of two bushels per acre, and will afford pasture from the middle of April to the first of June.

Second Crop.—Oats and peas, sown as early in the spring as possible, sown at the rate of a bushel of each, per acre, and will afford the second crop by the first week in June.

Third Crop.—Corn, sown the first of June on land occupied by the first crop. The corn should be drilled in rows. When the corn is 1 1-2 or 2 feet in hight, it serves as an excellent forage for swine. This crop should be available for forage by the middle of July.

Fourth Crop.—Rape, sown on land occupied by the second crop, which consisted of oats and peas. Rape for this crop should be sown as soon as the third crop is available for use. Usually it is sown by the middle of July and will be grown sufficiently for pasture by the first of September. Use Dwarf Essex Rape, sown at the rate of 4 pounds to the acre when sown broadcast, and 2 and 2 1-2 pounds when drilled in.

In raising hogs for pork production the farmer can no longer afford to keep his pigs penned in the small pig sty, the sooner and the greater opportunity pigs have to range on good pasture, the greater profits of pork production will result.

Gnats.—Buffalo gnats, black flies, etc., are all blood sucking insects, and cattle are often driven insane by them. The early stages are passed in water, millions of them developing in some localities. Repellants are the only materials giving anything like protection, and even these do not always succeed in keeping them away. A mixture of fish oil and carbolic acid gives the most satisfaction. In badly infested districts it is customary to burn leaves or anything giving off a dense smoke, and it is said that the cattle learn to run towards the smoke when flies are too numerous.

Indigestion—Splint.—I have a 4-year-old colt that has not thrived all winter, altho he has been well fed. My neighbor is a good horseman and he thought his stomach was out of order, for his breath had a bad odor. I also have another colt, same age, that shows some lameness when he trots, but he walks sound. I notice a small hard bunch on leg below knee that is hot and tender. After this colt travels a half mile he goes sound or nearly so. W. A. T., North East, Pa.—His teeth may need attention. Give ½ oz. gentian, ½ oz. ginger and ½ oz. cooking soda in feed, 3 times a day. A change of feed might remedy the whole trouble. The inside of foot may be too high, and be benefited by being lowered. He will be less sore and lame and might get well at once. Apply 1 part red iodide mercury and 10 parts lard to bunch, once every day or two until the parts blister, then discontinue using the medicine. If you can possibly rest the lame horse do so, but if obliged to work, drive slowly.

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Grange

This department is conducted by R. P. Kester, Lecturer of Pennsylvania State Grange. Notes, queries, comments and news of grange work are invited from readers. Obituary notes and news of purely local interest can not be used. Address all communications for this department to R. P. Kester, Grampian, Pa.

A LETTER AND ITS ANSWER.

The Grange in Rural Life.

"To Lecturer Pennsylvania State Grange. Dear Sir: I have been reading with interest your articles of comment and explanation concerning the principles and work of the grange. While I am not as yet a member, I am interested in everything that is really for the permanent improvement of agriculture and the uplift of country life. I believe, with you, that the three great agencies now existing, the public schools, the country church and the grange, when fully developed, are the means thru which we may hope to bring the results desired.

What is the attitude of the grange towards other agencies—existing and proposed, for the improvement of agriculture and country conditions? For example, state college, the department of agriculture, the county expert or agent, country life commission, rural progress societies, etc.? I see so many movements on foot that I hardly know where to add my little mite. If you can put me straight, it will be appreciated by yours truly, G. S. C., Lancaster Co., Pa."

There are many honest inquirers like the writer at the present time who are more or less "muddled" as to what is the sensible thing to do, since there are so many "movements" demanding his support, both in time and money.

In the first place it must be understood that the so-called "rural problem" is more than a problem of increasing production. Yet it is the first thing the professional writer or speaker thinks of and talks of. He first charges the American farmer with being ignorant of the principles of success in his business; he tells him how much more is raised per acre in some foreign country; how he is annually depleting the fertility of his farm; how careless and unbusinesslike he is in everything. These things have been harped on so long that the outside public has come to the conclusion that the greatest work of philanthropy that any one can engage in is that of uplifting agriculture; hence the multiplicity of agencies that have lately been proposed. Let us examine it at first hand.

First, agriculture is more than a business. It is a life. While it feeds men, it produces men; develops character. It furnishes the occupation and environment in which the highest type of citizenship is fostered. Hence we can see that agriculture must never be commercialized as have other great callings and businesses. While the farm is being improved, the farmer must also be improved. The mental, moral and social atmosphere must be edified.

Who is to do it? Why need we ask? The educator knows that only the personal endeavor and activity of the individual is effective in developing individual strength. Hence, what we most need is to have our interest aroused and our moral purposes energized by working thru the agencies at hand. Thus we increase a much needed ability, the willingness to co-operate with one another.

Intelligence of a people is increased thru education. Hence we must increase the efficiency of the institution by which we are educated—the rural school. Compared with what the rural school might be to rural people, it is as a kindergarten compared to a college. Even so, we deny the assertion that rural people are less intelligent or less efficient than people in other business or professions.

The country church, when once it awakens to its duties and possibilities, will be a much greater power elevating the moral, religious and social life of its people. We will unify the efforts of the divisions and sub-divisions and instead of the multiplicity of weak and inefficient churches, there will be fewer but stronger and more helpful organizations—churches doing work that really helps its people in solving the knotty problems of life.

Then the grange furnishes an opportunity for work and activities that do not properly come within the scope of the other two named. It furnishes a common meeting ground where all may work together for all things in which we have a common need; education, society, business. It furnishes an opportunity as is stated in the Declaration of Purposes for "meeting together, talking together, buying together, selling together." It furnishes an opportunity by which the farmer may demand, yes, force a square deal in his commerce with the world. The business side of agriculture must be made profitable before any kind of "uplift" movement will help, and that profit does not depend at present upon increased production alone.

As to the other agencies named in the letter, the grange has always given its best support to the development of State College and the State Department of Agriculture. The former has educated hundreds of young men who have gone back to the farm and lent their greater abilities to the work of improving agriculture. State College should be and will be further developed. The grange has always worked hand in hand with the Department of Agriculture. It has backed it in all worthy efforts to improve the purity of food and feed and in its efforts to protect the dairy and other farm interests. It has co-operated in the work of farmers' institutes and has received great benefit.

As to the county expert—that will depend. Where the farmers are sufficiently interested to ask for and are willing to co-operate, contributing to the maintenance, good may be expected. As an organization, the grange is neither opposing nor proposing the movement.

Concerning the last two named in the letter, every grange is a country life commission, and every community should be organized into a rural progress society. They are the only kind that will count. We are not slums nor do we need "slummers." We hold that the movements that will really move are those that enlist the interest and efforts of the country people, thus educating and developing the individuals and the communities to the highest possible degree. Then and only then will agriculture be at its best and country life be what it might be.—R. P. Kester.

GRANGE ATTENDANCE

With every meeting of our State Grange, we learn that several granges have become so feeble that they are about to pass out of existence; also of more new ones that seemed in a fair way to prosper. There are many reasons that contribute to the gradual decay of a grange body—lack of attendance, lack of concerted effort, friction between members. The one great thing of vast importance to make it grow is the selection of the lecturer; this officer must be a person of vim, tact and intelligence. Every member, unless too painfully diffident, must be brought to take some active part if possible. These individuals who are given parts should consider it their moral duty to accept them and delight in the performance of them.

Our Roslyn grange has prospered for many reasons, the greatest of all being the unity and good fellowship of the members. If a certain verbose granger should prove irritating by too frequent and prolonged outbursts, we must be patient and act the well-bred persons we supposedly are. For, often that person is one of the staunchest and best supporters of the grange. Everyone is not so gifted that he may say the proper word at the right moment in a charming way. When we feel that the members are becoming lax in attendance, the lecturer tries a novel program, with a lunch for the last course. Cards are sent to notify the delinquents and this usually brings a good attendance. A masquerade recently held was a real success. By persistent effort we are at last promised electric lighting for our homes. "All things come to those who wait"—if they do not wait too patiently.—Elizabeth O. Jean, Maryland.

APPRECIATES PENNSYLVANIA FARMER

Farmersville Grange No. 328, at its regular meeting March 29, passed resolutions "commending Pennsylvania Farmer to all our members because of its sound judgment on economic as well as practical agricultural lines." The question of renewal or continuation of subscriptions was left in the hands of individual members without the grange assuming responsibility for them. The grange further resolved that the contributions by Brothers Kester, McSparran and Ailman "should commend Pennsylvania Farmer to all grange families thruout the state."

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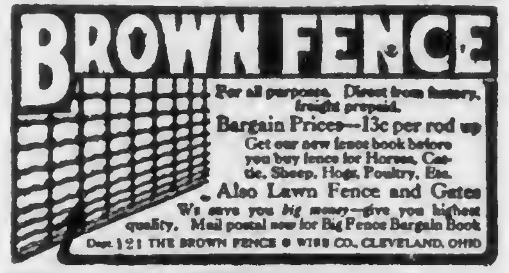

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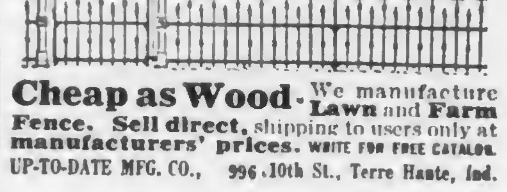

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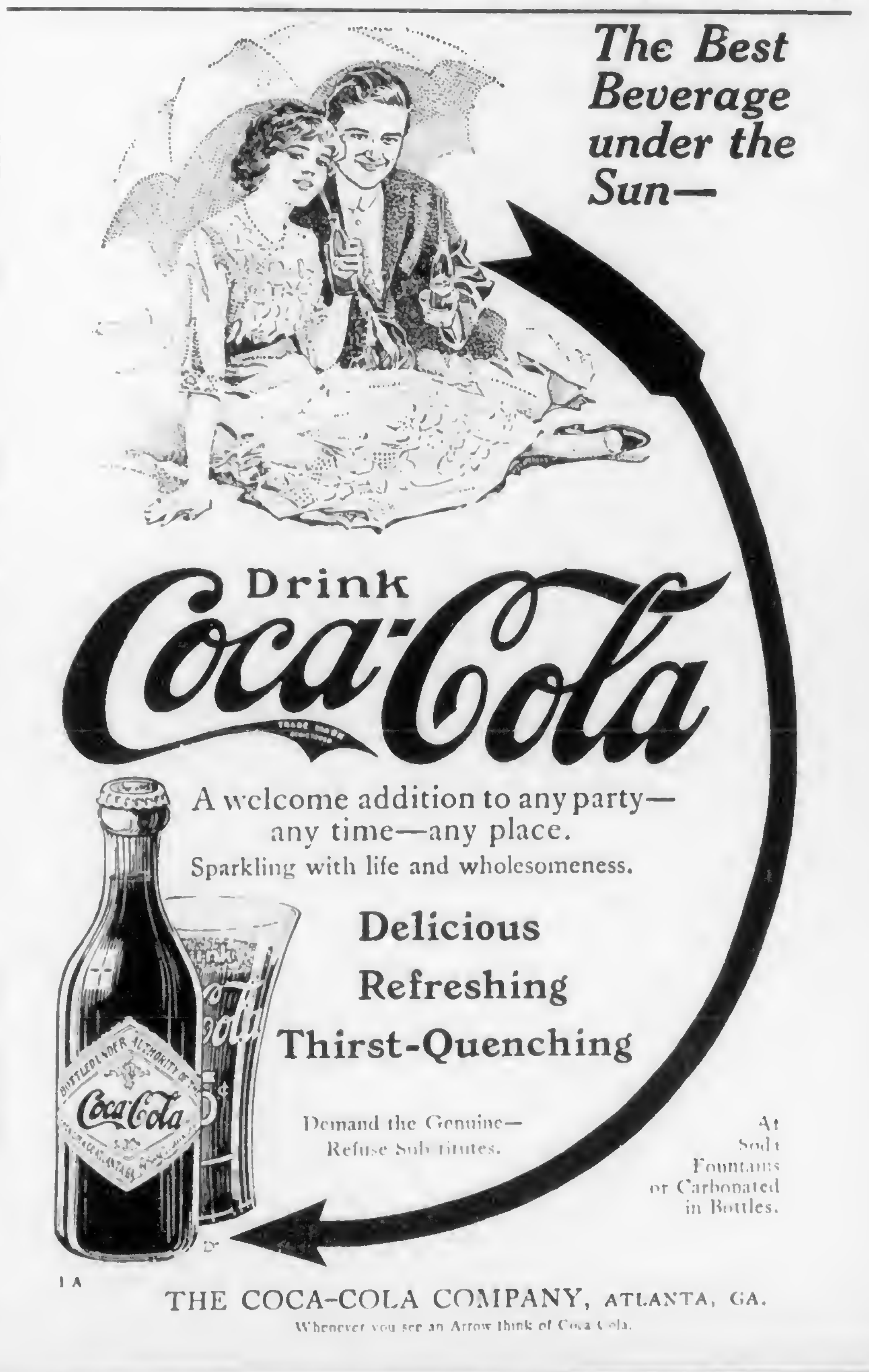

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ESTABLISHED 1880 PUBLISHED WEEKLY

Established 1880. Published Every Saturday.
Entered as second-class matter at the postoffice at Philadelphia, Penna.

The Lawrence Publishing Co., Proprietors
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General Office
214-216-218 South 12th St., Philadelphia, Pa.

Branch Offices For Advertising Only
Cleveland, O., 1011-1015 Oregon Ave
New York City, 41 Park Row
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TERMS OF SUBSCRIPTION

One Year	52	copies to one person	$0.50
Two Years	104	" " " "	$1.00
Three Years	156	" " " "	$1.25
Five Years	260	" " " "	$2.00

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Philadelphia, Pa., May 3, 1913.

THE AGRICULTURAL DEPARTMENT

Within the last decade the general progress and national interest in agriculture has been marked. The National Department of Agriculture has grown correspondingly. In twenty years it has risen from a more or less obscure department to one commanding the attention of the world. A recent act making appropriations for the department for the fiscal year ending June, 1914, provides for the work of this department more liberally than any preceding appropriation. The total amount carried by the act is $17,986,945 or $1,335,119 more than that of the present year, and many new and far-reaching plans have been made for the wise expenditure of the increased resource. The McLean Bird Protection Bill, protecting wild geese, wild swans, brant, wild ducks and all migratory game, carries with it $10,000 for the enforcement of its provisions. For the prevention of further dissemination of dangerous diseases $25,000 is set aside, and all of the department's police force, such as meat inspection, food and drugs act, plant quarantine, etc., receives increased support. New legislation in forestry is supported by $75,000 and $100,000 is available for the segregation of land to be open under the homestead laws. An increase of $75,000 has been made for extension work to be used for farm demonstration and management. A fund of $325,000 to eradicate the cattle tick has been made, with the proviso that none be used for the construction of dipping vats or materials except for department experimental work. Hog cholera work received $75,000 and gipsy moth work, $300,000. Certain new lines of effort will be started, including marketing systems, experiments in ostrich farming, cotton experimentation, all of which are liberally provided for. The Bureau of Weather gets $1,707,610; Bureau of Animal Industry, $2,031,196; Bureau of Plant Industry, $2,667,995; Forest Service, $5,343,045; Bureau of Chemistry, $1,058,140; Bureau of Soils, $334,020; Bureau of Entomology, $712,210; Biological Survey, $170,990; Office of Experiment Stations, $1,901,260, and Public Roads, $279,400. With such increased resources the work of the various sub departments is expected to increase correspondingly in efficiency.

TARIFF TINKERING

The proposed tariff bill can scarcely be accused of tinkering with the subject, but it is rather a general slashing of rates. Whether or not such slashing is going to be productive of the results aimed at, the legislators themselves admit is uncertain. As we said in a previous comment, we believe that the present bill represents an honest effort to adjust rates to an equitable basis. But, at best, it establishes new rates only in accordance with the supposedly honest opinion of its framers. The charges are not based upon a systematic, or even a painstaking study of differences in cost of production at home and abroad. The bill is aimed at the high cost of living, the special interests and monopoly-produced goods. The cutting of rates on all agricultural products, and placing many of them on the free list is supposed to affect the cost of these products to consumers. But there is no evidence that the law makers have even the remotest idea as to the extent of this effect, or whether their general reduction is discriminating properly between products of the same class. We are told from Washington reports that the administration and the majority in congress are pledged to the passage of the bill in practically its present form, and that while some hearings may be held, few changes will likely be made. But even tho protests will not avail now, farmers may be expected to remember that their industry has been subjected to the greatest reduction for the supposed benefit of consumers, while manufacturing interests are made to suffer least. The greatest menace, however, must come from the fact that the proposed rates are so largely experimental. They may or may not be just to industries affected, and they may or may not reflect the actual differences in those conditions upon which tariff rates are supposed to be based. But granting that they are just, they will remain on the proposed basis only until there is another change in the national administration. Such a sweeping change by a party of one belief is certain to bring an equally sweeping reaction when the party goes out of power. It is a question whether the general prosperity of the country will not actually suffer more from the uncertainty of these radical changes than from the differences in rates themselves. This sort of tariff tinkering hurts, and the history of the past forty years teaches that it leads nowhere in the development of a stable national policy. Every tariff change has demonstrated the folly of leaving a matter so closely related to national prosperity in the hands of political parties, and this last experience promises to be no exception to the rule.

WOMAN SUFFRAGE

The equal suffrage issue is at last on the road to final decision in this state. The Rockwell resolution was passed in the Senate April 22 by a vote of 26 to 22. It was adopted in the House several weeks ago by a vote of 130 to 70. It must now await action by the next session of the legislature, when, if it is again adopted, it will go to the voters of the state for final ratification. While it is by no means assured that it will survive these two final tests, its passage by the present Senate was a great victory for the suffrage forces. It is now a recognized state issue, and will be an important factor in the next state election, plans for which are already being laid by the state suffrage association. The success of this movement in this state, as well as the progress being made in other states, is but an evidence of the progressive wave which is sweeping over the country. Opposition to it has always been more theoretical than real, but such opposition has prevailed because there has not been the weight of popular demand sufficient to induce law makers to interfere with established conditions. The struggle in the state senate was typical of the stand taken by legislators everywhere. The opposition had nothing to hang its opposition on except precedent and adherence to so-called principle. Such opposition can not prevail against well-founded and properly conducted public demand.

DISTRIBUTING FOOD PRODUCTS

In this issue is published the final article in the series by Dr. King on distribution of food products and the factors which influence the present high cost of food commodities in cities. We suggest that our readers keep these articles on file for future use. Marketing is one of the biggest economic questions before both country and city people at the present time, and this series presents a careful analysis of present conditions which will serve as a reliable basis upon which market reform and curtailment of waste must be established. Dr. King is an authority upon the subject. He has spent the greater part of the past 18 months in a careful and systematic study of market conditions in the large market centers of the East. His thoro grasp of the existing conditions, as well as the remedies for them is rather strikingly shown by the fact that in this series of articles he has touched on practically every feature of marketing which was made prominent in the recent two-day conference on marketing held at Chicago. That meeting was addressed by experts from all parts of the country, yet Dr. King has given us in this series, in logical and tangible form, almost every fact and suggestion which was brought out by this great gathering. Much state and national legislation is aimed at the high cost of living. The proposed tariff changes are indorsed as a move to lower the cost to consumers. Yet here is a question at the very doors of both producers and consumers which comes closer to the every-day living conditions of all classes, and more directly affecting the prosperity of all classes than either the tariff, monopoly control or foreign competition. It is one of the many problems that must be worked out at home by the home people, who know their own needs and who only need to get together to work out a remedy. Dr. King will be glad to receive information from any farmers pertaining to this subject. Address him at the Wharton School of Finance, University of Pennsylvania, Philadelphia.

COMMISSION MERCHANTS' BILL

The commission merchants' bill has been amended and reported out of committee in the house for early action. As amended, this bill provides for the licensing of all persons or firms selling agricultural products on commission. Such persons or firms must also furnish bond to the amount of $2,500, keep record of grade and amount of goods sold and amounts received and report same to consignors and in case of disagreement must supply name and address of purchaser; must make payment within 30 days of receipt of goods. Any attempt to sell goods on commission without license, or any attempt to defraud or misrepresent in the handling of such goods is made punishable by a fine of not more than $1,000. This bill has been greatly strengthened by its amendments. Every farmer and prospective shipper should join in urging its passage.

NEW ERA IN MARYLAND AGRICULTURE

The election of Harry J. Patterson to the presidency of the Maryland Agricultural College, and the reorganization and reconstruction of that institution promises to bring about a new era in Maryland agriculture. Dr. Patterson is particularly fitted to meet the duties of his new position because of his intimate knowledge of the agricultural possibilities of the state and its people. In a public statement during the past week he outlined a progressive program for the college to which all classes, and especially the farmers, should give hearty support and co-operation. This program, very briefly stated, includes the following.

An institution designed to care for at least 1,000 students within the next decade. Modification of the military system, with dormitory room for a part of the student body. Retention of scientific and literary courses but specialization in agriculture, particularly in production of food products to give farmers of state greatest advantage from near-by markets. Establishment of agricultural courses to care for four-year students in applied agriculture, four-year students in advanced agriculture, two-year students in farming and short courses. Specializing engineering courses in farm mechanics and rural engineering so far as possible. Course in domestic economy and practical science as applied to home. Course for training of teachers in agriculture, with possible maintenance of model rural high school. Summer school for rural teachers. Develop study in farm marketing.

DR. HARRY J. PATTERSON.
President Maryland Agricultural College.

This is an ambitious program, and one that would put the institution in the front rank of agricultural colleges. It would at the same time give a mighty stimulus to the agriculture of the state, in providing just the sort of leadership which farmers have a right to expect from their state college. The realization of these plans will mean the expenditure of money; Dr. Patterson estimates about $1,000,000. But the expenditure of that amount will be a good business investment, and it is upon that basis that the new president expects to ask for support. The proposed plans outline an efficient, business-like administration. As a matter of good business, the state should give the financial support necessary to their completion.

PENNSYLVANIA LEGISLATIVE NEWS

Progress of Legislation.—The legislature can finish its work within one month if the senate gets busy on the big legislation and the house promptly takes up the appropriation bills, the public service commission and other legislation which is still tied up in committees. The fact that the legislature starts today on its 15th week and only about 50 bills have become laws is evidence enough as to what has been going on. In spite of the applause which the larger chamber has been winning by breaking the 8 hour law in sessions, the fact remains that the grist of 1913 is small.

Action Demanded.—Committees and organizations interested in legislation are demanding action, and even the governor is showing signs of asserting himself to secure early disposition of bills. It is rather surprising that the revenue-raising bills, upon which the appropriation measures are declared to depend, have been held back, while laws relative to gas works in Phoenixville and regulating marriages in the 18th century have been gravely sanctioned. The coming week will probably indicate the result on notable legislation. What is hoped to be the final hearings will be held on several measures, including compensation acts and the public service measures, and while the child labor bill is facing a hard row, it is believed it will go thru. Too much time has been wasted on election bills, and those which have been sent from one house to the other are of the kind that require study.

Oleo Beaten Again.—The bill to allow coloring matter to be placed in oleomargarine and to reduce the licenses for retailers was defeated by a vote of 142 to 45. It was one of the worst beaten bills of the session and the debate showed that when it comes down to battling the farmers can take care of their own and get help from the cities. The fact that a number of the legislators from our largest cities voted against the bill shows that the alleged demand for oleo in industrial communities does not exist. One of the most effective speeches against the bill came from a Philadelphia member. Several city members spoke on the measure from the standpoint of the farmer. The fact that the city members who voted for the bill failed to hold their own colleagues opened the eyes of many to the fiction which has been built up about oleo and the workingman.

Cold Storage.—The two houses can not agree on cold storage regulation. A bill drafted by a house committee was referred to a senate committee and has been on the senate calendar for some days. In the meantime a resolution was passed for a legislative commission to make an investigation of the whole cold storage and report to the next legislature. This measure was sent to a house committee and there it rests.

Agricultural Instructors.—The bill providing for the employment of agricultural instructors, which passed the house some time ago, will probably become a law in a short time. It has been warmly urged by state officials, as it is designed to supplement the educational work of the farmers' institutes by sending practical men into the field to advise farmers. The money for their pay will be included in the general appropriation bill.

The State Fair Bill.—Probably by the time this is printed the house appropriations committee will have acted upon the bill to establish the state fair. Opposition, which was formidable, is weakening and there may be a favorable report on the bill, altho the appropriation seems likely to be reduced from the half million figure.

Mill Tax.—The bill to levy a one mill tax on all property taxable for state purposes except mortgages and judgments on real estate was sent to committee last week after having been debated in the house. This is the bill which was designed to furnish revenue for township road improvement. The funds for this object will be provided out of general revenue and in the general appropriation bill.

Stallion Bill Out.—The Snavely bill to give owners of stallions or jacks liens on offsprings for service has been reported favorably to the house and will probably become a law.

School Code Not Harmed.—Two important and some trifling amendments proposed to the school code were defeated last week, demonstrating that legislators have wisely decided to let time test the law of 1911. One of the amendments would have restored the rebate for payment of taxes in certain periods, while another would have changed the system of selecting school boards in Philadelphia and Pittsburgh.

Vocational Education.—Considerable attention is being given to the vocational education bills. The principle is favored, but estimates of costs are lacking. The governor is disposed to favor agricultural education, and is urging that estimates be promptly prepared for guidance.

The Rural Credits.—The bill to provide $2,100 for the state to send two delegates abroad to study the rural credit system is expected to become a law soon. There has been criticism of the governor for failing to send men selected by the State Grange, but it is said that the men appointed will meet the demands. A progressive banker from the western end of the state is said to have been picked to go, and is so much interested that he evidenced willingness to pay his own expenses if needed.—Hamilton, Harrisburg, Pa., April 28.

NEW JERSEY FARM NEWS

Fruit Prospects.—Prospects for a fruit crop next fall are excellent, according to the farmers of north Jersey. Peach, pear and apple trees are well set and healthy. Only a small crop was obtained last year in the orchards in this section.

Damage by Weather.—Early vegetation in south Jersey, which was well advanced before the recent cold spell came, was hurt by the frost. The sand blown by high winds also did considerable damage, and not more than half the usual crops of vegetables are expected. Heavy frosts are also said to have ruined the early strawberry crop. Under the influence of warm, wet weather, the young fruit developed rapidly, was more tender than usual and thus very susceptible to freezing.

Plan Joint Meet.—Plans are under way for a joint annual convention of the State Board of Agriculture and the State Board of Horticulture. It has been proposed that the joint sessions be held in Trenton during the second week of December. The summer meeting of the State Horticultural Society will be held in July at the farms of Granville Leeds, in Burlington County.

Report of Stallion Board.—Examinations have now been completed for the year 1913 by the Stallion Examining and Registration Board. In 1908 fully 69 percent of the stallions examined were grades, while in the last examination only 31 percent were graded, and this in spite of the fact that the total number of stallions has greatly increased. The number of purebred stallions in the state has trebled during the last three years, making a gain of over 300 per cent in that time. Only licensed stallions are permitted to be bred in the state. The decision of the examining board is final in granting certificates, and a penalty of $50 for the first offence and $100 for each subsequent violation of this act is fixed by law.—D. T. H.

NEW YORK LETTER

Forestry Matters.—Of the 22 million acres of land in this state enclosed as farms, but 14 million acres are actually producing crops. This means that there is an area in this state as large as the entire state of Massachusetts that is non productive, or rather that is not profit producing. The Syracuse Forestry Department believes that this land should be made more productive by being planted to trees which should produce from $2 to $3 per acre per year. We are now sending out into other states from 12 to 15 millions of dollars every year for wood for our industries.

Outlook for Fruit.—According to reports from various sections, the outlook for good fruit crops of all kinds is excellent. In some sections there was some damage from frosts but it is believed that this was in no section very serious, altho it may prove more so at places along the Hudson river than was at first anticipated. In the western counties the prospects for a large fruit crop are good, and this applies to apples, peaches and cherries. Trees have blossomed profusely.

Several Matters.—The New York Highways Protective Association has issued orders that all advertising signs infringing on the highways must be removed, as such infringement is a misdemeanor.—According to a new law the governor must appoint 9 of the 12 trustees of the State College of Forestry at Syracuse, to remove any objection to the maintenance of the college on the ground that it is a sectarian institution.—Members of the grange in Dutchess county are contemplating the purchase of the old fair grounds at Washington Hollow and holding a fair there this fall under grange management.—New Yorker.

MARYLAND NEWS LETTER

Agricultural College.—The fire that destroyed much of the state agricultural building at College Park recently, caused considerable speculation regarding a new location of the college. Prof H. J. Patterson, the recently elected president of the college, has been director of the Maryland Experiment Station for many years. He is very popular with the Maryland farmers. Another fire recently destroyed the complete poultry plant and all the records of some very interesting poultry experiments which were about being completed. The college was doing some very excellent work in poultry, and at the big winter poultry show in Baltimore made splendid educational exhibits.

Frost Damage.—Frost last week in some of the lower counties of the state did considerable damage to the strawberry crop prospects, and in other sections it is claimed peaches were also hurt.

Coast Artillery.—Arrangements have just been made for coast artillery organizations in the state. The Maryland National Guards will man the posts. The first will be located at Easton.

Liquor Control.—The Liquor License Board of Baltimore is weeding out the law-breakers in great shape. Those who have been arrested for selling on Sunday have been refused a renewal of license, and in many cases licenses taken away from them at once. So far, more than 120 saloons and hotels have been refused licenses. It is estimated that by May 1 about 250 saloons will be closed. The loss in revenue to the city will be over $120,000, but the gain in other respects will be a very healthy improvement of a most excellent character.—G. O. B.

Veterinary

(Conducted by W. C. Fair, V. S.)

(Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also name and address of writer. Initials only will be published. When reply by mail is requested, it becomes private practice, and a fee of $1 must accompany the letter. This is one of the most valuable columns of the paper and we invite readers to make use of it. Clippings from this column, when properly preserved and classified, would make one of the most valuable medical symposiums a farmer-stockman could obtain.)

Loss of Appetite.—I have a horse that has a very poor appetite. He has never been a good feeder, and it seems to me he becomes more dainty the older he gets. He appears to be much more fond of hay than grain. C. N. M., Telford, Pa.—Give your horse ½ oz. Fowler's solution, ½ oz. fluid extract gentian and 1 dr. fluid extract nux vomica at a dose in feed, 3 times a day. You should feed him a good quality of mixed hay and some roots.

Sweeny.—I have a 6-year-old horse that slipped and fell down 5 weeks ago. Since then he has been lame in left shoulder. For the past two weeks this shoulder seems to be growing smaller, and as I am anxious to use him for spring work I would like to have him cured. B. E. F., Washington, Pa.—Clip hair off shoulder and apply one part powdered cantharides and 6 parts fresh lard to shoulder, once a week. He should be fed plenty oats and muscle-making food. If he is not lame work will not hurt him.

Curb.—We have a yearling colt that has curb on right hock, but it is not causing much lameness. This colt has rather crooked hocks, and for this reason the curb shows on him very much. B. M. J., Green Castle, Pa.—A bunch of this kind is not very easily removed; however, if you will apply 1 part iodine and 10 parts fresh lard to bunch every day or two, you will succeed in getting rid of most of the enlargement.

Bots.—I am quite sure that my 8 year old horse has bots, for he keeps thin and is inclined to rub tail and is quite nervous. I am now doing my spring work with him, but he fails to hold his flesh. What had I better do for him? K. A. W., Sandy Lake, Pa.—At this season of the year, the bots usually let go the wall of the stomach and are passed out of body with the dung. Give him 1 oz. ground gentian and 1 dr. ground nux vomica at a dose in feed, 3 times a day.

Mammitis.—I have a cow, 4 years old, that calved March 10th. Since then her udder inflames and swells badly, this swelling extending forward as far as navel. As soon as she refused to eat and became feverish, I gave her 1 lb. Epsom salt which gave her some relief, but her milk yield lessened considerable. The next week her milk flow increased gradually and now she gives four quarts at a milking. A swelling appeared on the fore part of left quarter and opened, discharging pus that had an offensive odor. I have injected peroxide of hydrogen into wound and dusted on burnt alum. The bag has sloughed and at present the wound looks bad. D. H., Saegertown, Pa.—Dissolve 1 dr. permanganate of potash in a pint of water and apply to udder, twice a day. Give her ½ oz. hypo-sulphite of soda at a dose, 3 times a day.

Abscess.—I have a 2-year-old heifer that has a large swelling on outside of fore shoulder, caused, I imagine, from kick of horse. The bunch is rather hard and tender. What had I better put on it? L. E. S., Cory, Pa.—Apply equal parts spirits of camphor and tincture iodine to bunch, 2 or 3 times a day. If the bunch softens and fluctuates on pressure and the hair pulls out easily, open it and allow its contents to escape. Then inject peroxide of hydrogen into sack slowly; also apply 1 part carbolic acid and thirty parts water once a day.

Gastritis.—I have a dog that has had a weak stomach for the past 60 days. He is quite inclined to vomit after eating and is quite nervous. He is 16 months old and has never been sick before. A. E., Morristown, N. J.—Give dog 10 grains of bicarbonate soda at a dose 3 times a day for one week; then give him 30 drops of peroxide of hydrogen in two tablespoonfuls of water, 4 times a day, and keep up this treatment until he is well.

Rheumatism.—I have a sow, 1 year old, that acts as tho she has rheumatism in her hindquarters and also in knees. She doubles over on knees when trying to get up and will never get on foot unless obliged to do so. She is a good brood sow, will weigh nearly 250 lbs. and is in good condition. P. C., Grass Lake, Mich.—Discontinue feeding your sow corn, feed oats, oil meal and roots. Give her 20 grains sodium salicylate at a dose in feed, 3 times a day. Apply 1 part turpentine, 3 parts olive oil to back and hindquarters, once a day. She should be kept in a dry, clean place. I am not very sure that she will recover; however, give her a trial of 30 days, and if she shows no improvement, fatten her.

FIELD PEAS
nothing better for making a big lot of feed. Also Soys, Vetch, Rape, Reid's Yellow Dent Corn, Etc., and the best Alfalfa that you ever saw. Write for samples.
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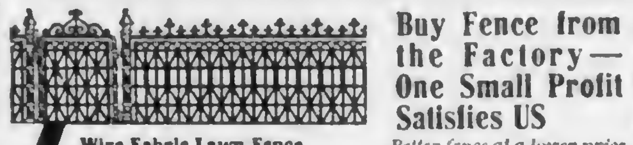
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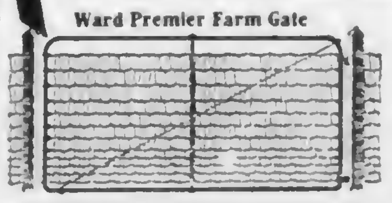

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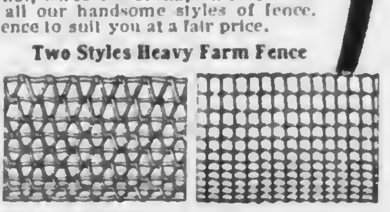
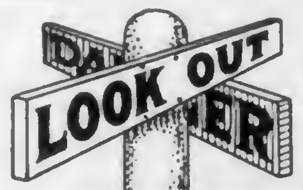
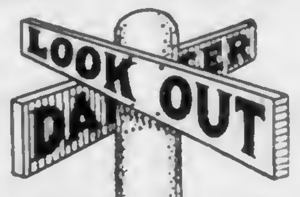




For Worms This Month



Right now is the time the stomach and intestinal worms begin to get in their deadly work among your flocks and herds. If neglected they will kill off your little lambs and pigs, keep all your farm animals in poor condition and rob you of your whole season's stock profits. Let me show you how to rid all your stock of these pests. I'll do it and PROVE IT or no pay.

I'll Feed Your Stock 60 Days Before You Pay

I'll Save Your Lambs

I'll Save Your Pigs

I'll stop your usual summer losses from worms. I'll promptly rid your stock of these blood-sucking, profit-eating, dangerous pests and put your animals in better summer condition than ever before. I'll do it at my risk—not yours. You need not pay me a single cent if I fail. I'll do it with Sal-Vet.

The Great Worm Destroyer SAL-VET The Great Live Stock Conditioner

"Sal-Vet" requires no dosing, no drenching, no handling, no trouble at all. Simply place this wonderful medicated salt where all your stock can run to it freely and THEY WILL DOCTOR THEMSELVES. You will be surprised how they will keep in better condition—thrive better—gain faster—make you more money. I'll prove it right on your own farm at my risk before you pay.

Send No Money—Just the Coupon

Fill out the coupon at right—tell me how many head of stock you have and I'll send you enough "Sal-Vet" to last all your stock 60 days. You simply pay the freight charges when it arrives. If it fails to do what I claim, I'll cancel the charge—you won't owe me a penny. Address
SIDNEY R. FEIL, Pres.
THE S. R. FEIL CO., Mfg. Chem.
Dept. PNF Cleveland, O.

PROOF
In 10 days after I commenced feeding my lambs Sal-Vet, they began to gain flesh and now Oct. 3rd they are in perfect health and fat as they can be. I have used tobacco in large quantities and worm powders of three different kinds and they did no good. J. A. ALEXANDER
Maple Hill Stock Farm
New Harmony, Ind.

"Before getting your "Sal-Vet" I had lost thirteen of my best hogs, but since feeding "Sal-Vet" I did not lose a single one, and every animal is in fine condition."
Signed: GEO. MOREN
R. No. 1 Pittsburg, Kansas

PRICES: 40 lbs., $2.25; 100 lbs., $5; 200 lbs., $9; 300 lbs., $13; 500 lbs., $21.12. No orders filled for less than 40 lbs. on this 60 day trial offer. Never sold in bulk; only in Trade-Marked "Sal-Vet" packages. Shipments for 60 days' trial are based on 1 lb. of Sal-Vet for each sheep or hog and 4 lbs. for each horse or head of cattle, as near as we can come without breaking regular size packages.

SIDNEY R. FEIL, Pres.
THE S. R. FEIL COMPANY
Dept. PNF 5-3-13 Cleveland, O.
Ship me enough Sal-Vet to last my stock 60 days. I will pay the freight charges when it arrives, report results in 60 days and will then pay for it if it does what you claim. If it does not, you are to cancel the charge.
Name ....
P. O. ....
Shipping Sta.......... State ....
No. of Sheep....... Hogs....... Cattle....... Horses.......

Cost of Distributing Food Products--V

By Dr. CLYDE L. KING, University of Pennsylvania.

AGENCIES FOR LOCAL DISTRIBUTION.

The elements in the cost of distributing food products are: (1) cost of sorting, packing and preparing for market; (2) cost of haul to shipping point; (3) cost of assembling into carload lots or lots large enough for shipment; (4) profits of the country store keeper, professional huckster or others who buy in the country and ship to the city; (5) cost of haul from shipping point to market terminal; (6) cost of sale by at least one commission merchant, and (7) often by a second jobber; (8) haul from terminal to retailer's store; (9) retailer's profit; (10) cost of delivery. It is this costly and cumbersome method of distributing food products that makes the consumer pay considerably over twice as much as the farmer receives for his produce.

It is the purpose of this final article of this series to discuss the agencies for local distribution of food products which may be shortened and costs thus reduced. It is in selling at home that distribution costs are to be lowered. The 20th century has brought us certain new agencies for local distribution that have extended the meaning of the words "at home" to include all markets within a radius of fifty or more miles from the farm. Most eastern farmers can find an adequate outlet for their produce within such a radius. To the author's mind, it is mainly in the development of direct shipments to relatively near-by markets that the farmer's returns can be increased and consumers' prices lowered.

For perishable freight, Los Angeles is now but 173 hours and 25 minutes from Chicago; Jacksonville, Florida, is but 89 1-2 hours from Chicago (1,140 miles); New Orleans but 57 hours and 20 minutes from Chicago; Washington, D. C., is but 12 hours from New York, 38 hours from Boston and 46 from Montreal. Fruit and vegetables grown in regions as far away as southern Florida can be delivered to consumers in Chicago and New York within 5 days after gathering. It takes about the same time for produce gathered 25 miles out from Philadelphia to reach the Philadelphia market. Moreover, long haul shipments have better refrigeration facilities. These significant facts point to the necessity for better agencies for local distribution if the eastern farmer is to remain a competitive factor with the farmers of the South and West.

The unit of quantity for a shipment, is, of course, a carload. Freight rates for carloads are lower, time of transit shorter, risk of injury less, opportunity for securing better market higher, probabilities of adequate returns vastly greater. But not all farmers can sell direct in carload lots, and the first problem is to secure to them the advantages of car lot shipments. There are several plans by which this can be done. Many steam roads now conduct local "pick up" services. Small assignments are collected from a number of stations and brought to a given point to be combined into carloads. Some of the railroads also run special market trains in order to pick up relatively small quantities. In Philadelphia a market car leaves Columbia on Tuesdays and Fridays, stopping at most of the stations to pick up market produce, and gets into Philadelphia in time for the Wednesday and Saturday markets. A third plan is the professional forwarding agent, who consigns enough produce to make a full carload at a given station. He sends a car to himself at destination and delivers the contents to the various consignees. Such agents have worked up a good business in Indiana, Michigan and Tennessee, handling small shipments almost as easily as full loads. This plan offers exceptional possibilities for savings in local shipments everywhere.

Newer Agencies

There are at hand, however, certain newer agencies for distributing farm produce that are much more mobile, cheaper and more effective for local distribution. These include trolley freight, motor trucks, water transportation, parcels post, and good roads. These agencies tend first to lower the cost of haul to the station. In 1905-06 the total cost of haul of 12 products from farms to shipping points was $73,000,000. More significant still, the greater the distance from the station, the less frequently are food products taken to market, and, therefore, the greater the loss thru decay and deterioration, both to the consumer and the producer. Second, they make it possible to ship in less than carload lots and, therefore, to handle the surplus of the average small farmer. Third, goods can be delivered immediately to the market or section of the city where needed.

Trolley Freight.—The features of trolley freight that make its possibilities loom up so large are: Frequent stops at small outlay, thus reducing the cost of farmer's haul to station, and saving time to farmer; tapping regions inadequately served by other carriers, thus placing many farmers several hours nearer the city's markets; farmers can market their produce while fresh, thus securing higher prices; the ease of shipment in smaller quantities than over railroads, thus giving new avenue for marketing the surplus of small farmers, and for focussing attention upon the nature of the out-put of all farmers; reaching sections of city not reached by railroad terminals, thus making possible distribution of food products to the needier sections of the large city and exactly to the market center in the small city, both cartage and time are saved; increases facilities for getting output of manufacturing establishments to railroad stations, and from city to outlying suburbs and farmers, thereby enhancing both urban and farm values; gives express service at freight rates; it pays, the leading difficulty is to get freight from the city to the farm so as to avoid "empties" on the outward run.

The use to which trolley lines are put as freight carriers may be classified as: 1. Carrying farm produce to market and miscellaneous manufactures and merchandise to the country. 2. Carrying carload lots as feeders of the steam railroads. 3. Handling parcels and lighter packages into and out of the large cities. 4. Acting as a means of urban distribution.

Centering in Indianapolis are 11 electric express and trolley freight lines, bringing in upwards of 15,000 tons of freight per month, the major portion being food stuffs. The city secures over 75 percent of its market supplies over trolley lines. A long distance telephone message at 5 in the morning brings fruit and vegetables from a radius of 50 miles. The result is a splendidly developed agricultural section and a better development in the manufacturing and commercial possibilities of Indianapolis, and a lower food cost to the Indianapolis consumer. South Bend and Fort Wayne, in Indiana; St. Louis, in Missouri; cities in southern Illinois; Chicago; Columbus, Dayton, Toledo, Cincinnati and Cleveland, in Ohio, are other cities already profiting by such traffic. Many of these cities have open municipal markets with the trolley lines running directly to them, so farmers may obtain retail prices for their goods.

There are about 3,000 miles of street railway track in Massachusetts, and the greater portion of this mileage is within 50 miles of Boston. A definite effort is now being made by the Bay Street Railway Company to develop its incoming and outgoing freight by bringing into the city farm products of all kinds, and to take out to the farm department-store packages, hardware, meats, paper, vegetables and fruit from other lands and all commodities manufactured in the vicinity. This company now has in use 17 express and freight cars with a capacity of 20 tons each, heated by electric heaters to protect perishable goods in cold weather, with open bulkheads for cooling purposes in warm weather. The vegetables are so arranged that the windows can be lowered, and thus by air circulation prevent deterioration of goods in transit. During the warm months the cars stop and pick up the produce from each of the suburban lines thruout the country districts, thus saving the farmer even the haul to a railway station, as well as giving him a more mobile and efficient method of getting his produce to just the point in Boston where he can dispose of it with greatest profit. The express rates charged are 22 1-3 percent lower than those charged by the old line express companies, while the freight rates average but from 1 to 2 cents per hundred in excess of steam rates.

The second class of freight handled by trolley lines is the hauling of heavy freight by the carload as feeders of the steam railroads, and as a means of getting produce in carload lots direct to the retailer. The Metropolitan Division of the Toronto and York Radial Railway has encouraged farmers to build grain elevators and ship both grain and hay by carload lots.

An example of the use of trolley freight in handling parcels and lighter packages is found in the class of service offered by the Ohio Electric Company. The merchants' freight service of this company is handled on passenger cars, equipped with baggage compartments. The rates are little higher than those for freight handled on the regular trolley freight car. Commodities handled in this way consist largely of ice cream, fruits, bread and merchandise. The trolley lines centering in Philadelphia also do a business of this character.

The fourth kind of trolley freight is the handling of freight within the city. This is still in its infancy, as the trolley lines in many of our larger cities have heretofore been prohibited from doing a freight business. It is one of the problems for the city to develop and holds out great possibilities.

The possibilities for an increased use of trolley freight in Pennsylvania are unlimited. The state ranks second in track mileage among all the states in the Union, having 4,343 miles, and stands second also in regard to the amount of invested capital.

The use of trolley freight in this state is in its infancy, as the law permitting electric lines to handle freight was passed only in 1907. Where given a fair trial under competent management, it has always proved profitable and has grown so rapidly as clearly to show that the farmers welcome such a means of transportation. Last year the business in and out of Pittsburgh totaled one hundred million pounds! Further increases await added terminal facilities through the enactment by the legislature of the Isler bill (House Bill No. 1067) giving to cities of Pennsylvania power to lease their public wharves for terminal sheds or stations, and to erect and maintain market houses there in. The existing unsatisfactory condition of the trolley freight service in Pennsylvania is due in the main to the difference in gauge or in wheel specifications, so that thru freight cars can not be run into the city; want of proper traffic agreements, and want of interest in certain trolley lines in the development of trolley freight.

Trolley freight saves time to farmers. For instance, certain farmers 15 or 20 miles from Philadelphia used to take a day to drive to the Philadelphia market, a day to sell their produce, and a day to get home. Thus half their week was gone. With trolley freight they now load their goods on a trolley car at six in the evening, take an early train to the city the next morning, sell direct to the consumers enroute at the market, and are back home in the early afternoon, using but half a day instead of three, and keeping their invested capital at home at productive work. With a proper trolley freight system the farmers of each district could organize a town office and exhibit where their products could be sold at wholesale or directly to the consumer at one of the markets, or in a rented store elsewhere, or the organization might do without an office and carry on business largely by direct shipment to the consumer.

Motor Trucks.—Farm produce when shipped over steam railroads must be handled a number of times. It must be (1) loaded on wagons at the farm, (2) then placed on the station platform, (3) to be loaded on to the cars, (4) unloaded, (5) on to a platform, and then (6) upon a vehicle, (7) to be taken to the wholesale market, where (8) it is again unloaded, (9) only to be loaded a few hours later on (10) the carts and wagons of the retailer, (11) to be taken to his store, then to (12) be loaded on to delivery wagons, (13) to be taken to the consumer. With the use of motor trucks the produce could be loaded at the farmer's gate (the truck going, as is frequently done already from farm to farm, until an entire load has been accumulated), then taken immediately to the retailer or to the section of the city where needed.

This saving in handling and the increased possibilities in direct marketing will make the motor truck a leading agency for food distribution in the future. The charges for a 5-ton gasoline truck, including interest at 6 percent on an investment of $4,800, insurance and driver, range from $6.96 per day for a run of 20 miles up to $8.39 per day for a run of 50 miles. A large Brooklyn, N. Y., department store displaced 33 horses with 11 trucks, at a 6-months saving of $1,360 in favor of the machines. The four leading American express companies have already invested $1,500,000 in motor trucks to facilitate the prompt and economical handling of packages. The Starkey Produce Company supplanted 5 wagons with 1 truck and reduced time of a round trip from 9 to 3 hours. Hence they could market perishable produce the same day it was gathered.

The savings of the motor truck within the city limits are even greater. Thomas Edison is reported as stating the case in this way: "Fifty percent of all the freight in the world is moved to and from railroad stations by the horse-drawn vehicle. The automobile truck of half the length takes double the freight and goes twice as fast." When our cities place terminals so as to eliminate unnecessary cartage and hauling large savings can be made. In Philadelphia 5,000 vehicles are used in carting and hauling freight. At $5 per day for 300 days per year, this means an annual charge of $7,500,000. A proper city plan could materially lower these costs.

Water Transportation.—More direct access to markets can also be secured thru the development of water transportation. Baltimore is demonstrating this fact. The gasoline barge and truck boat should have increasing places in the short haul and traffic for produce in Atlantic states. We may yet find that our old canals and waterways, once so highly prized, may have their value largely returned. The development of our city wharves, with the power in our cities to own and operate wharves and market piers, the completion of the New Jersey ship canal and the other intercoastal waterways will all aid in getting eastern farmers nearer by many hours to the markets of the urban centers.

Country Roads. Of distinct significance in reducing hours to market by heavier loads and ease of shipment, is the development of good inter-county roads. Farm values along roads centering in good urban markets have constantly reflected their advantages in higher values. The good roads movement is of importance to every farmer. The significance of having good county roads centering in the city is especially appreciated by Morris L. Cooke, Director of the Department of Public Works of Philadelphia, who is at present planning to use all the means in his power to perfect the leading county roads centering in that city. Similar movements elsewhere are of interest to both consumer and producer.

Parcels Post. Related to the possibilities of road development are the possibilities of sending farmers' produce into the city by parcels post. The fullest use of parcels post will necessitate a change in the present law, which was made too largely with the thought in mind of preventing competition between mail order houses and small country stores. The prevention of this competition has also resulted in its not being of greatest usefulness to the farmer in sending his produce to the market, altho it is of inestimable value to him in purchasing from stores, especially those within the first zone. The development of a postal express, the rates for which are based solely on the cost of operation and adequate return on investment, can not but have in this country, as it has had in European countries, a definite effect on direct marketing, and ease of shipment of small packages.

The thoro development of these agencies will result in a marked advance in the economic well-being of farmers; will focus attention upon the possibilities of the eastern farm; will help farmers to adapt their output to the peculiar needs of their near-by city; decrease cost to farmer and consumer thru direct marketing; increase purchasing power for the city's stores and manufactures; encourage the suburb and discourage urban congestion, and will bring lower prices and better products to the city consumer. The city does not end with its boundary lines; it is as extensive as its purchasing clientele. Co-operation of city and country is essential to the happiness and welfare of each. Let city and country everywhere co-operate, and the farmer and city dweller can both more largely sell and buy at home, thus encouraging mutual prosperity. Herein is a program worthy of greater civic effort.

The Daughter of David Kerr

By HARRY KING TOOTLE.

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PRECEDING CHAPTERS

The city of Belmont is a typical middle western village, under the rule of the political "boss," David Kerr. The daughter, Gloria, had spent her childhood away from home and knew nothing of her father's profession or business affairs. Supposing him to be a wealthy real estate merchant and a leader in Belmont society, she came home to take her place in the best circles of the town. To gratify her wish and continue the deception, David Kerr secretly secures the services of Judge Gilbert to introduce and assist Gloria in establishing herself in society. In return, Kerr is to give the full weight of his political influence to secure the passage of a questionable street railway franchise, the money coming from such influence going to Gilbert. Joe Wright, recent purchaser and editor of the Belmont News, met Gloria while traveling abroad. He had fallen in love with her before he was aware that she is the daughter of David Kerr. Since coming to Belmont he has found that it is necessary to oppose the "boss" thru the News, and he takes up the fight on the street railway franchise, the very measure which is purchasing the services of Judge Gilbert in Gloria's behalf.

CHAPTER VIII (Concluded)

It was four o'clock when Morrison arrived at the News office with a copy of the proposed franchise. As he threw it on the table in Wright's private office he exclaimed:

"If that goes thru, the company can do anything according to its provision except commit murder."

"I suspected as much," replied Wright. "What right of way have they?"

Morrison went to the map of Belmont on the wall and located the city terminus of the proposed line.

"Here's where they start on their own tracks," he explained. "You see, there's a provision in the charter of the Belmont Traction Company whereby any interurban line can use its tracks to the heart of the city upon payment of a fair rental. Here's the Townsend Park Line coming down Bluff Street, and right here where Bluff Street crosses Maple Avenue the Interurban's own tracks will start."

"Then how does it run?"

"South on Maple Avenue and Maple road, to a private right of way which runs east of the stockyards and parallels the county road to Corona."

Wright studied the may earnestly.

"You see, I'm too new to know that neighborhood," he said. "Why did they pick Maple Avenue?"

"It's the only street they can use in that part of town. It's the natural artery for that new district out there, and there are hills on both sides of it."

Wright still puzzled over the map.

"What are those red lines crossing Maple Avenue about two blocks south of Bluff Street?" was his next question.

"Those? They are the railway tracks of all the lines entering Belmont except those that come down the river from the north."

"Are they going to build a viaduct there?"

"Nothing is said about it."

The new venture would be a good thing for Belmont if the company would confine itself to good works. The most objectionable thing was the lack of frankness on the part of the men back of the enterprise. Here was a corporation seeking to serve the public and not taking the public into its confidence.

While Morrison and the publisher of the News were canvassing the situation a telegram from the Chicago News Agency was delivered to Wright. It read:

"Hammersley is the private secretary of Adolphus Koerner, Koerner & Co., packers. Others are clerks in law office of Kendall, Strang & Kendall."

"By George!" exclaimed Wright. "The stockyards company!"

Then he remembered what the county surveyor had innocently told. There could be no doubt of it. The stockyards company was making some move which it did not dare make openly.

"It looks like it," assented Morrison. "Have you any idea what they want?"

"Not the slightest. They're not fighting the traction company, I know."

This, thought Wright, explained Gilbert's many visits to Chicago recently. The stockyards attorney had apparently no connection with the new company, but Wright and Morrison, too, when it was explained to him, were both of the opinion that he was directing every move. If he was in it, David Kerr was in it; and if David Kerr was in it, he was not in it for his health.

In seeking to unravel the tangled skein they now had a loose end to work with. They could not imagine, however, why the stockyards company was entering the street car field in such a peculiar manner.

Wright sat with his chair tilted back against the wall, his hands behind his head, gazing at the map on the wall opposite.

"Morrison, a newspaper man has to trust in many cases to his sixth sense; that's his nose for news, for the big story. Often he misses fire, but when he does hit the bull's-eye everybody knows it." Such was Wright's preamble as he brought his chair down on the floor and prepared to tell the lawyer what his sixth sense had made him feel was the real object of the game. "The stockyards company is preparing to steal a street."

"What!" gasped Morrison. "What makes you think so?"

"Everything. See how the river is eating up the only tracks to the stockyard. They've got to get to the yards farther east. Maple Avenue is the easiest way. The franchise says nothing about what kind of cars are to run, how they are to be propelled, or what they are to carry. I'll bet they are going to run cattle cars filled with hogs and sheep and cattle down Maple Avenue, and pull them with steam engines, too."

"I won't believe it," protested the lawyer. "Maple Avenue is a residence street!"

"The stockyards company is a foreign corporation interested only in dividends."

"Look at Benton Park!"

"Yes, take a good look; you won't want to in a year from now."

"I don't believe it."

"Any way, that's the theory I'm going on. If it is correct, I've struck the nail on the head with my first guess. If it is wrong, I'll keep hammering away until the public demands and is given the truth. If I'm wrong, then they'll soon be smoked out. They can't stand being so misinterpreted when asking the public for a favor. But I'm right, I tell you. They're going to connect with the railroad tracks where they cross Maple Avenue two blocks below Bluff Street. Such a belt line railway will be extremely valuable."

It was after six o'clock before they decided to leave the office. As every pro and con of the situation had not been exhausted, they adjourned to the Belmont Club for dinner and there continued puzzling over the franchise and its meaning.

Shortly before eight o'clock Wright drained his coffee cup and looked across the table at his companion.

"Doing anything tonight?" he inquired.

"No. Nothing on hand that I know of."

"I'm calling on Miss Kerr tonight. I want you to go with me; I can't go alone."

"I shall be very glad to," replied the young lawyer, successfully concealing his surprise.

Wright realized the fight was on. He also knew what Gloria had come to mean to him, and after what they had said last night he was afraid to see her alone. Now his first duty was to the public, that public which so often accepts benefits and sacrifices all unconscious of its own gain and what the cost has been. For the general good, for an ideal, for his belief in what a paper should be, he was putting aside—just for the time, his heart told him—the one woman who could make him supremely happy.

The deferring of hope was heavy upon Wright's heart as with Morrison he walked in silence to Gilbert's house. To himself he kept repeating some verses from their "birthday book":

In the twilight we parted,
In the night broken-hearted
We dreamed a sweet dream.
Then we met and we parted
Again broken-hearted,
But dreams come again.

CHAPTER IX

The story Wright had printed the first day and the reply it drew from the Banner the next morning caused the News to be awaited with undisguised eagerness on the second afternoon. This was hightened on the part of the men in the syndicate interested in the franchise by the pertinent questions put to them in the morning by News reporters. David Kerr was called on the telephone half a dozen times by his lieutenants, and arrangements were made to have a line open to Esmeralda Springs at three-thirty, the hour when the News was issued.

Although they were prepared to discount some of the story because of the questions asked them, yet none of the ring men was prepared for a revelation of the scheme such as the News made. Black headlines ran across four columns and the story also took up most of the second page. There was a map of the proposed interurban route, and pictures of pretty homes on Maple Avenue. But from one end of the story to the other there was no mention of David Kerr or of the local backing being given the bill before the council. It was expressly stated that the incorporators of the new company were merely dummies and that they were acting in the interest of the stockyards company.

Amos Gilbert in an interview denied any knowledge of the transaction, saying that his connection with the stockyards company was merely nominal and that he did not even know if the company was interested in the line proposed. He did not see how, as a company, it could be.

Gilbert sat in his office as soon as he secured a paper and read the story word for word over the telephone to Kerr. The latter promptly announced that he would be home the next day, and ordered that Gloria be taken from Belmont on any pretext whatever for a few days until the fight had been allowed to die down. The next day was Sunday, on which Wright published no paper, and Kerr would be home before another issue appeared. He agreed with Gilbert that the Banner ought to ridicule the alleged expose.

Sunday night, much to her surprise, but not much against her will, Gloria went to St. Louis with Mrs. Gilbert to pick out furniture for Locust Lawn. She did not know that her father had returned from Esmeralda Springs that morning and had been closeted all afternoon with Gilbert and John Kendall, who had hurried to Belmont in response to a telegram. The girl had not seen Wright all day, nor had she seen him Saturday, but there came from him a box of roses at noon. Little witch that she was, she meant to surpise him by sending him a note of thanks from St. Louis. She knew he would join her and Mrs. Gilbert there on her hint that they would be glad to see him.

Wright received her note and perceived the slightly veiled invitation, but he was too busy even to answer. It was a week that contained more excitement than Belmont had seen since, a frontier village, it had struggled with the question of whether the state should secede or remain in the Union. David Kerr found himself confronted by a formidable line of battle. The Banner kept pounding away at the News, but the afternoon paper was not to be diverted from its purpose. The citizens on Maple Avenue formed the Maple League, and wore buttons on which were a maple leaf and the legend, "Help us save our homes." The car line was to run through the seventh and eighth wards, and the aldermen in those wards were deluged with letters, post cards, telephone calls and personal visits. Finally they went to David Kerr and begged him that if he had enough votes without them to let them oppose the franchise as they were in the midst of their canvass for re-election. The boss held them in line.

The bill had its second reading at the council meeting Tuesday, but under orders from Kerr nothing further was done with it at that time. He began to worry about the approaching election. What to him was the passing of the bill at that time compared to the control of the city for the next two years? If he let it sleep now and the election went his way then it could be passed soon after. By the time another election rolled around, Belmont would have forgotten.

So it came about that the democrats tried to forget the franchise. When the bill disappeared they were loud in their denunciation of the republican thieves who had stolen it. With the outburst they were willing to subside and forget the matter, but this the News would not permit. Wright kept it to the front and the democrats were forced to accept it as an issue. The continuous attitude of apology necessitated by this was weakening them every day. The independent wave which had been sweeping over the country had been late in striking Belmont, there having been no newspaper to marshal the forces, but now it was increasing to the volume of a tidal wave which Kerr would have hard work pouring oil upon.

(To be continued.)

Household

MAKING ATTRACTIVE COUNTRY HOMES

What a temptation it is, when the warm spring days come, to leave other work and dig in the dirt. The spring winds and sunshine are so exhilarating that it would be a pleasure to work at the garden and flower-beds, even tho we did not have the hope of fresh vegetables and blossoms to repay us. I am a great lover of flowers and have always raised a few, altho often the time to care for them has been borrowed from other duties, or even rest. After buying various varieties, I have settled down to a few good, old-fashioned stand-bys that do not require any great amount of care or work. Yet they make a vast difference in the appearance of our home and it rests one just to look at them as we are going about our other work.

What lawn is complete without its row of sweet peas, that are so easily grown and yield such an abundance of blossoms and perfume? My first thought is of the peas. I plant them early in a north and south row, fertilize well, keep them free from weeds, and dirt well loosened, until they are making a vigorous growth. This, with putting up the wire for them to climb, is nearly all the work required until the blossoms come. And, of course, it isn't work to pick them. A little later I put out the dahlia bulbs. They are very easily raised and make a brilliant row from mid-summer until frost. Our house faces the north. Along this side I plant a row of wood's ferns and geraniums. First a fern, then a geranium, again a fern, and so on, using white and red geraniums one side of doorway and pink and white on the other side, but always using plenty of white. This northern side is just shady enough for these plants, and the geraniums bloom profusely.

We have a small building which is used for a wash house, a short distance from the kitchen door. I plant morning glories and climbing naturtiums around this, train them over the sides, and thus transform the workshop into a bower of beauty that has called forth many remarks of admiration. Sometimes I have asters and salvia. They require a sunny location, and if one grows the plants from seed, they take more time than some others, but are always beautiful. Our house is so situated that the lawn is equally level and green all around. On the back lawn are some grand old maples, where the hammock swings and the reading table and chairs are placed. Along this side of the house I have started a row of the good, old fashioned perennials. Here I will have the snowdrop, daffodil, narcissus, garden cowslips, lilies of the valley, English violets, peonies of different kinds, white, red and rose, perennial phlox, both white and pink, lemon lilies, and a beautiful white lily that was one of my mother's garden treasures. I will arrange these to give the best effect, both as to time of blossoming and to color.

One day I was working in this row when a friend and her little daughter came to see me. She was much interested in my plants and said she was fond of those same things and had often thought of putting out some near her house, but it was so much work she felt it would be foolish. She said, "You know we rent, and might just get them started when we would move and someone else would come there." Her little daughter had been standing by listening to all that had been said. When she heard this she lifted a face full of serious inquiry and said, "Mamma, don't you s'pose the other folks that come there would 'joy them just as much as we would?" Her mother looked at me for a moment with such a startled expression, as the idea was quite new to her, then she said, "Yes, dear; I suppose they would and you and I will go home and start our garden." When they were ready to go, I put some roots and bulbs in a basket and gave them to the wee maiden. She trudged off by her mother's side, very proudly carrying her basket, and never dreaming what a lesson she had taught us.

When we drive thru the country we wonder why more farmers do not try to make their homes attractive. If the litter was picked up around the buildings, the lawn well kept, and a few flowers and vines grown, the average country home would be much more inviting, and the farmer and his family less liable to think of changing their location.—Barbara Hill, Erie Co., Pa.

RECREATION IN FARM CLUBS

By Charlotte Marshall

Most of us women of the country have little recreation; we take a minimum of time for ourselves for real rest and pleasure. Some of us may belong to granges, and nearly everybody, we hope, goes to church. Many of these good women work hard in church societies and enjoy it, but I am speaking of belonging to something that has no ultimate object other than pure and wholesome enjoyment—just a day, now and then, when dull care is laid aside.

Soon after I came from my home in the city, as a farmer's wife, a grange was organized in this community and I became a member. I have tried to be an interested and sympathetic worker. The church also claims its share of my attention. I had belonged to a Current Topic Club in the city, and some others at various times, so I began to wonder why we could not have something diverting here. After two years, in which time I had made some warm friendships, I asked eleven women to a little afternoon tea. When we were sitting about cosily, I told them of what I had been thinking. They received the idea with enthusiasm, finally planning a "Lace Club," to meet on a certain Thursday in every month, the membership taking in turn the pleasure of entertaining the club in their homes.

This social arrangement was planned for pleasure; it has been most delightful and profitable. The most conscientious woman could not say that we have wasted our time. During the first meetings we worked at embroidery and lace until the one o'clock luncheon was served, but after some time we did not stay closely to this, but developed other plans. As "events make history," so one little incident led to a change in the history of our work.

One of our members who has no one in her home to fit her, brought three house dresses to our club meeting. There she was fitted, and we immediately sat about making up the garments. We all helped with the buttons, button-holes and finishing touches. She went home elated that her dresses were done. This was fun, for we did not have to do it. We learned from our three most accomplished lace makers the art of making the daintiest of tatting and Irish point jabots, medallions, crocheted buttons and other lacey things. Then another day, one club woman, with an eye to business, brought a new lunch cloth and napkins to match. These we helped her hem. This past winter, knowing that the new parsonage had made a heavy burden of debt for the church, our club was turned into a dressmaking establishment temporarily. For one month we took orders for dresses, men's shirts, underwear and aprons. While this much sewing for two months, we made a profit, helping to pay off a troublesome debt.

We sew on anything we wish. We lend one another patterns and exchange ideas and recipes. Last Thursday our hostess showed us her little chicks. Her home-made arrangements for food receptacles were so good that we were mighty glad to learn of them. Do not think that you are neglecting your duties as wives and mothers in belonging to something that takes you away from home one day in the month; you will come back much brighter and healthier, because happier, ready for your regular work.

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Be sure to give the figures and letters of each pattern exactly as printed at the beginning of each description. We will not be responsible for correct filling of your orders unless you do so. Also give bust measure when ordering waist patterns, waist measure for skirt and age for children's patterns. Address Pennsylvania Farmer, 214-18 So. 12th St., Philadelphia, Pa.

6062—Children's Dress.—Four sizes, 2 to 8 years. Age 8 requires 2¼ yards of 36-inch material, ⅜ yard of 27-inch contrasting material. Price, 10 cents.

6078—Ladies' Dress, with Three-Gored Skirt.—Five sizes, 3 to 42 inches bust measure. Size 36 requires 4⅞ yards 36-inch material; ⅝ yard 24-inch contrasting material. Price, 10 cents.

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6188—Ladies' Sack. Five sizes, 34 to 42 inches, bust measure. Size 36 requires 2½ yards 36-inch material. Price, 10 cents.

6171—Ladies' Waist.—Five sizes, 34 to 42 inches, bust. Size 36 requires 3½ yards of 36-inch material. Price, 10 cents.

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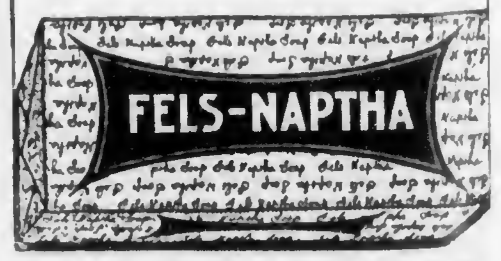

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Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., April 28, 1913.

Under an increase of receipts and a steady demand butter declined 2c. There is a good demand for fine eggs. Most of the receipts are not of the highest grade, and buyers are supplied with these. Live poultry brought good prices and has advanced a shade on the best grades. Vegetables were quiet with offerings fully equaling the demand.

Butter.—Western creamery, 34c; extras, 37c firsts to seconds, 31½@32c; special prints 38@41c; near-by prints, 35c.

Cheese.—New York full cream, 16½@17c, skims, 8¾@11c, according to quality.

Eggs.—Candled, 22@23½c doz.; extras, 21c Current receipts at $5.75 per standard case.

Poultry.—Fowls, 18@19c; old roosters, 12@12½c; spring chickens, 30@34c; ducks, 15@16c; pigeons, 32@36c pair.

Dressed Poultry.—Western fowls, 18@19½c; roosters, 15c; chickens, 18@19c; turkeys, 20@25c.

Vegetables.—White potatoes, choice, 65@70c bu. Onions, 50@75c bag. Cabbage, $5.00@7.00 ton. Lettuce, $1.00@2.00 basket. Cucumbers, $2.00@3.50 basket. Celery 25@60c bch. Spinach, $1.25@2.00 bbl. Kale 25@50c bbl. Egg plant, $1.75@2.25 box. String beans, $2.50@4.00 bu. Peas, $1.25@1.50 basket. Peppers, $2.50@3.50 carrier. Tomatoes, $2.00@3.50 carrier. Watercress, $1.50@2.00 100 bchs. Asparagus, 25@35c bch. Beets, $2.00@5.00 per 100 bchs.

Fruit.—Apples, choice varieties, 25@75c hamper, $2.00@3.50 bbl. Cranberries, $1.25@2.00 crate. Strawberries, 10@18c qt.

Hay and Grain.—No. 1 timothy, new, $17.50@18.00; No. 2, $15.00@16.00; No. 3 do., $12.00@13.00. No grade, $8.00@10.00. Clover mixed, No. 1, $13.50@14.00; No. 2 do., $11.00@12.00. No. 1 tangled rye straw, $13.50@14.00; No. 1 wheat straw, $10.00@10.50; No. 1 oat straw, $10.50@11.00. New shelled corn, No. 2 yellow, 63½@64c; No. 3 yellow, 62@62½c. No. 2 red wheat, $1.03@1.04; No. 3 do., 98@99c. No. 2 white oats, 42@42½c. Standard white, 41½@42c. No. 3 white, 40½@41c.

Hides and Skins.—Steers, abattoir, 15¼@16¼c; do country, 13¾@14¼c. Cows, abattoir, 14¾@15¼c; do. country, 12½c. Bulls, abattoir, 12¼@12¾c; do. country, 11½c. Calf skins, Nos. 5 to 12 and up, $1.35@2.45; do. green, 13@14c lb.

Seeds.—Timothy, $3.15@3.25 bu.; clover, white, $25; do. crimson, $6.25; do. mammoth, $14.50; do. sweet, $13.00; do. alsike, $13.25; red top, per bu., $13.50; alfalfa, $7.00@10.00; Canada field peas, $2.35; vetch, $8.50; rye, winter, $1.37; spring, $2.25; soy beans, $3.25; barley, $2.50; buckwheat, $1.50; cowpeas, $3.00@3.25; millet, $1.90@2.75; oats, $1.25.

Coffee.—Rio, 7s, 11⅜c; Santos, 4s, 13⅛c. Mild Coffee.—Cordova, 14½@17½c.

Provisions.—City beef, smoked and air-dried, 22@23c. Beef hams, 31@33c. Pork, family, $21.00@22.00 bbl. Hams, cured, 14½@15½c; skinned, 14¾@15¾c; smoked, 17@18c. Other hams, smoked, city cured as to brand, 16@18c. Picnic shoulders, 10@10¾c; do. smoked, 12@12½c. Bellies in pickle, 15@16c. Breakfast bacon, as to quality, 17@22c. Lard, refined, 11¾@12½c; do. in tubs, 11½@12c; do. kettle rendered, 11¾@12c. Tallow, prime city, 6⅞@7c do. country, 7⅛c; do. dark, 5⅞c; do. cakes, 7⅜c.

Sugar.—Cut loaf, $5.15 cwt.; cubes, $4.60; powdered, $4.45; granulated, $4.35; standard granulated, $4.40; crystal A, $4.35.

Flour.—For 196 lbs., in wood, winter clear new, $4.15@4.40; do. straight, new, $4.50@4.75; favorite brands, $5.25@5.60. Rye flour, Penna., $3.50@3.75.

BALTIMORE PRODUCE

Baltimore, Md., April 28, 1913.

Under steady and liberal receipts, butter remains about as last week. Choice eggs were scarce and brought good prices. Other grades are more abundant and harder to sell at satisfactory figures. Live poultry was steady under a restricted supply and ready demand. Fruits and vegetables enjoyed an active trading at steady prices.

Butter.—Creamery, fancy, 36c; do., choice 34@35c; prints and blocks, 33@36c; Maryland and Penna. rolls, 22@24c; prints, 21@22c. Process 29@31c.

Cheese.—Flat, 17½c; Daisy, 18@18½c.

Eggs.—Md. and Penna., firsts, 18c; western, 18c; southern, 17c.

Live Poultry.—Hens, 18c; chickens, 30@32c; old roosters, 11c. Turkeys, 24@25c. Ducks 13@15c. Geese, 14@15c. Guinea fowls, 20@30c.

Dressed Poultry.—Turkeys, 24@25c; chickens, 20@21c; roosters, 11@12c; ducks, 20@22c; geese, 11@17c.

Vegetables.—Potatoes, white, 50@55c bu. Sweets, $3.00@3.50 bbl. Cabbage, $1.50@1.75 crate. Danish, $6.00@8.00. Onions, 75@80c bushel. Lettuce, 75c@$2.00 bushel. Egg plant, $2.00@3.00 crate. Peppers, $2.50@3.00 crate. Squash, $1.25@1.50 basket. Spinach, 40@60c box. Cucumbers, $2.50@4.00 basket. Beans, green, $2.75@3.25 basket. Celery, $2.50@3.75 crate. Turnips, 10@15c box. Cauliflower, $2.50@2.75 bbl. Horseradish, $1.50@1.65 box. Beets, 2@3c. Asparagus, $2.00@2.50 doz.

Fruit.—Apples, new, $2.00@3.50 bbl.; 50c@$1 bu. Strawberries, 8@15c qt.

Grain.—Wheat.—No. 2 red western, $1.12¼; spot, $1.10¾. Corn, spot, 58¾c; contract 58½c. Oats, No. 2 white, 42½c; standard white, 41½c; No. 3 white, 40c. Rye 65@66c.

Hay and Straw.—No 1 timothy, $17.00@17.50. No. 2 timothy, $16.00. No 3 do., $12.50@14.00. Choice mixed, $15.00@15.50. No 1 clover, $11.50@12.00. No. 2 do., $9.00@10.00. No. 1 tangled rye straw, $11.00@12.00. No. 1 oat straw, $9.00@10.00. No. 1 wheat straw, $8.00.

Mill feed.—Spring bran, $22.00@22.50; Middlings, flour to white, $26.00@28.00; western middlings, $23.00@23.50; city mills mids $24.00@24.50.

NEW YORK PRODUCE

New York City, April 28, 1913.

There was a fair supply of the good grades of butter, but buyers bought only for immediate needs. Prices were irregular and a shade lower. The egg market is firm on the higher grades. Inferior stock is in abundance and hard to sell. Under advices of increased shipments of dressed poultry, the market weakened a shade, altho choice stock is readily salable at satisfactory prices. Fruits and vegetables were about as last week.

Butter.—Creamery firsts to extras, 30@31c; thirds to seconds, 29@29½c, factory, 25@27½c; state dairy, 27@30½c; packing stock, 23@26c; process, 25@32½c.

Cheese.—Whole milk, specials, 16@17¼c, do. common to fancy, 14@16½c; skims, 8@13c.

Eggs.—State and near-by, 21@23c; fresh gathered, 14@21½c; mixed, 19@20c.

Dressed Poultry.—Turkeys, dry, 20@22c; chickens, Penna., 30@35c; fowls, 14@18½c; old roosters, 14@14½c; ducks, 15@20c; roasters, 19@22c.

Live Poultry.—Fowls, 18c; chickens, 18c; old roosters, 12½c.

Grain.—Easy. Wheat, No. 2 red, $1.14½; No. 1 Northern, $1.03. Corn, 62¼c. Oats, standard white, 41c.

Vegetables.—Potatoes, state, $1.70@1.80 per 168-lb. bag. Cabbage, $1.50@1.75 crate; do. Danish, $7.00@10.00 ton. Green beans, $1.00@3.00 basket. Carrots, 50@75c bag. Cucumbers, 60c@$1.25 dozen. Lettuce, $1.50@2.00 bbl. Squash, 75c@$1.75 bbl. Celery, $1.00@4.00 case. Horseradish, $1.00@3.00 cwt. Parsnips, 50c@$1.00 bbl. Turnips, 35@75c. Watercress, $1.00@1.75 per 100 bunches.

Fruit.—Apples, $1.75@4.00 bbl., according to variety. Strawberries, 7@16c qt.

BUFFALO PRODUCE

Buffalo, N. Y., April 28, 1913.

Butter.—Lower. Creamery, choice, 34c; choice dairy, 31@32c.

Cheese.—Slow. Fancy, 17½@18c; good, 16@16¼c.

Eggs.—Firm. State, fresh, 19@20c; western, 18@19c.

Dressed Poultry.—Active. Turkeys, per lb., 23@26c; fowls, fancy, 17@20c; chickens, 16@20c; old roosters, 14@15c; ducks, 21@24c; geese, 17@18c.

Live Poultry.—Firm. Chickens, 18@21c; ducks, 21@22c; geese, 15@17c; turkeys, 22@23c; old roosters, 13@14c.

Vegetables.—Potatoes, slow. Home-grown, 60@62c bu. Cabbage, $1.25@1.50 crate. Onions, 60@75c sack. Beans, green, $2.75@4.00 hamp. Turnips, 75@80c bbl. Celery, 50@75c doz. Lettuce, 40@70c.

Beans.—Quiet, steady. Marrow, fancy, $3.35@3.40; medium, $2.40@2.50; red kidneys, $2.00@2.25.

Fruits.—Apples, $2.25@3.25 bbl.; 50@75c bu.

Honey.—Firm, No. 1 fancy, 17@18c; No 2 new, 13@15c; dark, 12c.

Hay.—Firm. Timothy, choice, on track, $17.50; No. 2 do., $16.00; No. 3, $15.00; light mixed, No. 1, $13.00@14.00; rye straw, $10.00; oat and wheat straw, $9.00@9.50.

Feed.—Weak. Spring bran, $19.50 ton. Standard mids., $20.00. Corn meal, $24.50. Gluten, $24.50. Hominy, $23.50. Oilmeal, $27.50. Cottonseed meal, $31.50.

YORK PRODUCE MARKET

York, Pa., April 28, 1913.

Butter is firm with hardly enough to meet the demand. Prices have not been so high for many years at this season; caused likely by the high price of dairy cattle. Prices have advanced 25 percent the last four months. Eggs are advancing.

Butter.—Country, 33@35c; separator, 33@36c. Milk, 6c per qt.

Eggs.—17@19c doz.

Poultry.—Hens, 15@16c lb. Dressed poultry, 45@90c each.

Vegetables.—Potatoes, 8@10c half peck; 50@60c bu.; cabbage, 3@5c each; lettuce, 5@8c; beets, 3@5c bunch; radishes, 3@5c; turnips, 6@8c per ½ pk; onions, 2@4c bch.; lima beans, 10@12c qt.; soup beans, 8@10c qt.; sweet potatoes 12@15c per half peck; parsnips, 10c per half peck; sauer kraut, 5@8c qt.; lard, 14@16c lb.; celery, 3@7c; rhubarb, 3@6c bunch; asparagus, 6@10c bunch.

Fruit.—Apples, 10@25c a half peck; strawberries, 15@20c box.

Retail Grain Market.—Wheat, $1.13; corn, 68c; oats, 48c; bran, $1.20 a cwt.; rye, 78c; middlings, $1.45 a cwt.

Wholesale Grain Market.—Wheat, $1.03; corn, 55c; oats, 37c; rye, 68c.

WILMINGTON PRODUCE

Wilmington, Del., April 28, 1913.

Trading on the markets during the week was normal and prices remained at about last week's figures. Eggs are more plentiful and the demand for chickens, both live and dressed, has somewhat declined.

Fruits.—Apples, 50@75c basket; $3.00@4.50 bbl. Strawberries, 12@20c box.

Vegetables.—Potatoes, 60@80c bu.; new, $4.50@5.00 bbl. Cabbage, $2.00 crate; 25c bas. Onions, 40c bas. Celery, 60@85c doz. Spinach, 80c bbl. Sweet potatoes, 75@90c basket; $2.50@3.50 bbl. Kale, $1.00 bbl. Lettuce, $2.00@2.50 basket. Asparagus, $2.75@3.50 doz.

Poultry.—Chickens, live, 18@20c.; do., dressed, 20@22c. Ducks, 13@14c lb.; dressed, 18c.

Eggs.—19@20c.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., April 28, 1913.

The cattle market during the past week was a shade lower on all grades.

	Beef Cattle	Sheep and Lambs	Hogs
Total for week	3,467	10,904	5,325
Previous week	4,112	12,146	4,817

Best steers	$8.70@8.80
Choice steers	8.50@8.62½
Good	8.37½@8.50
Medium steers	8.00@8.25
Common steers	7.50@7.75
Bulls	6.50@7.50
Fat cows	4.50@6.75
Thin cows	3.00@4.00
Milk cows	40.00@70.00

Veal calves are steady.

Best calves	$10.50@11.00
Good to choice do.	9.50@10.00
Medium	7.00@8.00
Common do.	6.50@7.00
Thin do.	5.00@8.00

Sheep and lambs are steady.

Extra wethers	$7.00@7.50
Choice wethers	6.50@7.00
Good wethers	6.00@6.50
Common to medium	3.00@5.50
Ewes, fat	6.00@6.50
Extra lambs	9.50@9.75
Good to choice do.	9.25@9.50
Common to medium	6.00@8.50

The hog market continued steady thruout the week at $12.75@13.00.

City Dressed Stock.—Choice classes of dressed meats are steady. Trade is normal. Steers, 13@14c; heifers, 10@13c; cows, 8@11½c. Veal calves, 14@16c, country dressed calves, 14@15c; extra do., 15½c. Sheep, 11@13c; extra wethers, 14c. Spring lambs, 16@17c. Hogs, 13@13¼c.

PITTSBURGH LIVE STOCK

Pittsburgh, Pa., April 28, 1913.

While supplies were not heavy last week, the market ruled 10 to 15 cents lower, particularly on medium and weighty grades; light cattle were about steady. There were 85 loads on sale today. With a slow demand, the market was lower on all grades.

Good to choice	$8.50@8.65
Good, 1300 to 1400 lb.	8.35@8.50
Medium to good, 1200-1300 lb.	8.25@8.40
Tidy, 1050-1150 lb.	8.10@8.25
Fair to medium, 900-1100 lb.	7.75@8.00
Common to good fat oxen	5.00@7.00
Common, 700-900 lb.	6.00@7.25
Common to good fat bulls	5.00@8.00
Common to good fat cows	4.75@7.25
Heifers, 700 to 900 lbs.	5.50@8.00
Bologna cows	4.00@4.40
Fresh cows and springers	20.00@80.00

Veal calves are 50 cents per cwt. lower. Today's receipts were 900 head.

Heavy and thin calves	$4.50@6.00
Veal calves	7.00@9.00

The supply of hogs was good all last week. The market closed at about 5 cents lower than the first of the week. There were 45 double-deck loads on sale today, and prices went lower.

Prime heavy	$8.95@
Prime medium weights	9.25@
Heavy mixed	9.05@
Best heavy Yorkers	9.20@
Light Yorkers	9.25@
Pigs as to quality	9.20@9.25
Common to good roughs	7.75@8.40
Stags	7.00@7.50

Sheep and lambs have been in fair demand for best grades; others lower. Spring lambs are very draggy. There were 35 double-deck loads on sale today. Choice grades were steady; others slow and lower.

Prime wethers, clipped	$6.10@6.25
Good mixed	5.75@6.00
Fair mixed ewes and wethers	5.00@5.50
Culls and commons	2.00@3.50
Spring lambs	7.00@10.50
Culls to choice lambs	4.50@8.00

BUFFALO LIVE STOCK

Buffalo, N. Y., April 28, 1913.

Cattle receipts today were 175 cars. Receipts were light all last week and the market held steady for choice butcher cattle. There was a decline of 25 cents per cwt. today.

Choice heavy steers	$8.60@9.00
Medium	8.00@8.40
Yearlings	8.50@8.75
Plain heavy	7.75@8.00
Handy butchers	6.75@8.60
Good to choice fat cows	6.00@7.25
Good to choice heifers	8.00@8.60
Butcher bulls	4.50@8.60
Feeders	6.00@8.50
Stockers	6.75@7.75
Cows and springers	40.00@85.00

The calf market was firm all last week and prices remained firm. With 2,100 head on sale the market showed further decline.

Choice veals	$9.50@10.00
Light and thin	4.00@6.50

Sheep and lambs were lower last week under a liberal supply. Today's receipts were 60 carloads. The market was strong. Clipped lambs are in good demand.

Clipped lambs	$8.00@8.15
Poorer grades	6.00@6.50
Yearlings	7.00@7.25
Wethers	6.50@6.75
Ewes	5.50@6.00
Sheep	6.25@6.50

Hogs of all grades sold easier thruout all of last week. Prices were a little lower generally. With 95 cars on sale today prices went still lower.

Heavies	$9.15@9.20
Mixed and medium	9.15@9.20
Yorkers	9.20@9.25
Light Yorkers	9.20@9.25
Pigs	9.20@9.25
Roughs	8.25@8.50
Stags	7.00@7.75

NEW YORK LIVE STOCK

New York City, April 28, 1913.

Cattle receipts for the week were 2,920 head. The market is irregular.

Steers	$6.00@8.50
Bulls	6.00@8.00
Cows	3.50@6.90

Dressed beef slow. Native sides, 12@14c.

Calf receipts were 9,800 head. The market is 50@75c lower.

Choice veals	$7.00@10.50
Good veals	6.00@8.00
Culls	6.00@7.00

Dressed calves are steady.

City dressed veals	14@16½c
Country dressed veals	11½@15c

Sheep and lamb receipts were 8,311 head. Sheep are lower and lambs steady.

Wooled sheep	$5.00@7.25
Clipped sheep	4.00@6.50
Unshorn lambs	7.75@9.25
Clipped lambs	7.00@8.25
Spring lambs	3.00@6.25

Hog receipts were 7,150 head. The market is steady to lower at $9.25@9.60.

BALTIMORE LIVE STOCK

Baltimore, Md., April 28, 1913.

Beef receipts for the week were 1,093 head. The market is 10@20c lower.

Steers	$7.00@8.40
Heifers	5.00@7.50
Cows	3.00@6.75
Bulls	6.00@7.25
Fresh cows	27.50@77.50

Sheep and lamb receipts were 3,379 head. Under a fair supply the market is slow.

Sheep	$3.75@6.75
Lambs	6.00@9.30
Spring lambs	4.90@10.50

There were 10,118 hogs on sale during the week. Under a liberal supply the market is lower.

Light western	$9.50@
Heavy to medium	9.00@9.15
Near-by	9.40@9.60
Pigs	9.25@9.40
Roughs	7.50@8.75

Calf receipts for the week were 500 head. Most of the receipts were of unattractive stock, and under a good supply the market is slow at $5.50@10.25.

PITTSBURGH HAY AND GRAIN

Pittsburgh, Pa., April 28, 1913.

Hay arrivals are mostly of the poorer grade, for which the prices are lower. No. 1 timothy and No. 1 clover mixed are scarce and in good demand. Straw is dull, and while the receipts are light there is little or no demand. No. 1 timothy, $15.00@15.75; No. 2 do., $12.00@13.50; No. 3 do., $9.00@11.00; No. 1 light mixed, $13.00@13.50; No. 1 clover mixed, $13.00@13.50; No. 2 do., $9.00@10.00. No. 1 clover, $13.00@13.50; No. 2 do., $8.00@10.00. No. 3 prairie, $10.00@10.50; No. 4 do., $8.00@9.00; No. 1 oat straw, $9.00@9.25; No. 2 do., $8.75@9.00; No. 1 wheat, $9.00@9.25; No. 2 do., $8.75@9.00; No. 1 rye, $11.00@11.50; No. 2 do., $9.25@9.50. Ear corn arrivals are in strong demand. Market stronger. No. 2 yellow, 64@65; No. 2 high mixed, 61@63c. Shelled corn receipts are light. Market strong. No. 3 yellow natural, 61@62c; sample, 59@60. Oats are in good demand and the market is strong. No. 2 white, 40@40½c; standard, 39@39½c; No. 3 do., 37@38c; No. 4 do., 35@36c. The demand for middlings is very slow. Market dull. No. 2 white mids., $23.50@24.00, No. 1 brown mids., $21.00@21.50. Winter wheat bran, coarse, $21.50@22.00; do., medium, $20.50@21.00.

ELGIN BUTTER QUOTATION

Elgin, Ill., April 28, 1913.

The quotation committee of the Elgin Board of Trade this afternoon declared butter firm at 30c a pound.

NEW YORK MILK QUOTATION

The wholesale milk price is $1.61 per 40-quart can for class C; class B, $1.71.

TOBACCO MARKET

The Lancaster leaf tobacco dealers, thru their board of trade, adopted resolutions denouncing the proposed tariff legislation relating to Philippine tobacco. They state that such a change would result in the closing of their factories and the throwing out of employment of thousands of persons, as well as rendering the growth of tobacco unprofitable to farmers and destroying the market for one of the very important products of the section. The farmers of the community will co-operate with dealers in opposing the threatened calamity.

The New York Market was more or less panicky, owing, it is said, to the recent floods and more to the proposed tariff changes. Leading authorities there are at a loss to know the motive of the proposed reduction. Another feature of this market was the increased interest that was shown in the heretofore more or less neglected Pennsylvania tobacco.

As predicted, prices have shown a slight improvement, but of course there is yet much room for improvement. It is now estimated that the small percentage of crop in growers' hands will soon find sale at fair to medium prices. Plant beds for the new crop are about all made, but the seedlings have not, as a rule, made their appearance. The prevalent warm weather tho can but be favorable to germination. Despite the more or less unsatisfactory situation, it is now estimated that there will be no reduction in the acreage of the present year.

The recent meeting of the Lancaster County Tobacco Growers' Association was characterized by an address in which the present status of the growers was well brought out. The address was prefaced by the statement that splendid crops of tobacco have been selling at $5, $6 and $7 per cwt., and then inquiry is made as to the cause of such an unfavorable situation. Trickery on the part of packers and dealers is alleged, and the addressee claims that it is impossible to get at the facts governing matters. The tobacco trust is given as the tobacco instigator of much injustice, including the damaging report that Pennsylvania tobacco is of poor curing quality. The speaker suggested organization, including the establishment of local warehouses with one central clearing house. It was stated that bankers were ready to help finance such a plan. It was said that growers are "licked to a frazzle" and that they are "on the run with packers giving them the laugh." A member suggested Kentucky organization methods, but it was thought that this would not be efficient in this state. While this authority may be somewhat extreme in his allegations, it is evident that the situation demands attention at the hand of growers.—H. E. Tweed, April 28, 1913.

PROFESSOR PUTNEY RETURNS TO PENNSYLVANIA

F. S. Putney, Professor of Animal Husbandry and Dairy Husbandman of the Rhode Island State College, has been appointed Assistant Professor of Dairy Husbandry at the Pennsylvania State College. He will take up his new work July 1 and will be a valuable addition to the staff of the School of Agriculture. Mr. Putney has had excellent practical experience as well as scientific training. He was connected with the departments of animal industry, agronomy and animal nutrition at State College from 1906 to 1908, and received his master's degree in agriculture in that institution in 1908. He had charge of a special study in dairy breeding at the Missouri Agricultural College, and was assistant to Dean and Director Mumford of that institution in 1909. He has been Professor of Animal Husbandry at the Rhode Island College for the past three years. His new work at State College will include instruction and investigation in milk production.

Dissatisfaction With Farm Demonstration Act.—There is already some dissatisfaction among New Jersey farmers concerning the act creating a state department of farm demonstration. The chief fault found is that it contemplates the selection of certain farms whereon demonstration work shall be conducted as a school for all farmers in the respective sections under the direction of the state superintendent of demonstration, assisted by the county superintendent. In other words, it proposes to take a man's farm out of his hands, the demonstration work to be done by the visiting official, and all the farmers of the surrounding country to be at the farm as visitors for the purpose of observation and instruction.

Another Farm Bureau.—A farm bureau was organized recently at Perry, Wyoming Co., N. Y., with W. H. McClelland, of Perry, as president. The grange of that place is interested in making the bureau a success. A competent speaker is to be engaged to address the different granges of the county and explain the work that the county agent is supposed to do.

CONGRESS OF SCHOOL HYGIENE

The fourth International Congress on School Hygiene will be held in Buffalo, August 25 to 30, inclusive. A comprehensive program of papers and discussions is being arranged. There will also be scientific exhibits representing the best that is being done in school hygiene as well as commercial exhibits of practical and educational value to school people. For full information, address Secretary Thomas A. Storey College of the City of New York, New York City.

ADVERTISING CLUBS' MEETING

The ninth annual convention of the Associated Advertising Clubs of America will be held in Baltimore June 8 to 13. The great problems of advertising and selling will be discussed by many progressive and successful business men. All the marketing and merchandising problems which manufacturers have to meet will be discussed by men who have met them and solved them. An attendance of over 10,000 is expected.

FOOD VALUE OF MUTTON

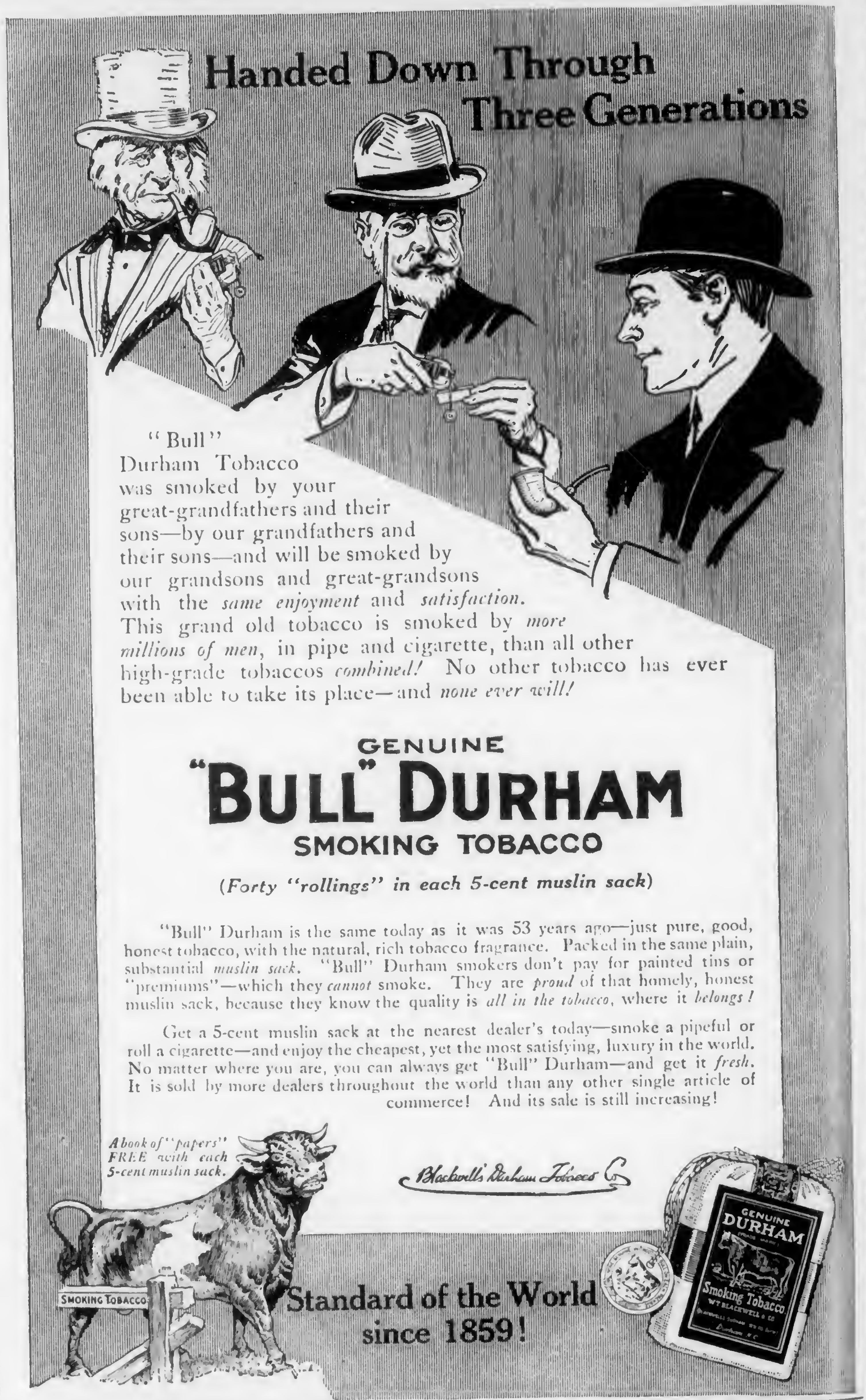
Farmers' Bulletin No. 526 is the latest of "Uncle Sam's Cook Books," and deals with mutton and its value in the diet. It shows that mutton is about the same as beef in composition and nutritive value, yet for some time it has been the cheaper meat on the markets. It is fully as digestible as beef and lends itself to a wide variety of ways of preparation. All of these features are fully discussed in the bulletin, and directions are given for preparing old dishes and of new ways to utilize, as well as entirely new dishes to be made with mutton. The bulletin is free for the asking. Address your congressman or the United States Department of Agriculture, Washington, D. C.

Cider Press Facts.—The problem of caring for the oversupply of apples is easy of solution if you have a cider press. Culls and unmarketable apples can always be turned to a profit in the form of cider vinegar, while in case of an oversupply of marketable fruit loss is prevented by turning the surplus apples into cider, jelly, apple butter, etc. The cider press is an important supplement to the apple orchard. The new catalog No. 17 issued by the A. B. Farquhar Company describes a complete line of presses and outfits, ranging from a capacity of 6 to 8 barrels per day up to the large hydraulic presses capable of turning out 400 barrels or more per day. The catalog also lists evaporators, apple butter cookers and complete equipment for cider making. It also gives valuable information on cleaning barrels, making apple butter, canning, feeding value of apple pumice, etc. All machines described are of the famous Monarch make, which are everywhere known as the cheapest in the end because of durability, efficient service and perfection of make. The catalog will give valuable information to every cider maker. It is sent free upon request. Address A. B. Farquhar Co., Ltd., Box 106, York, Pa.

Prize Composition on Roads.—Logan Waller Page, Director, Office of Public Roads, Department of Agriculture, Washington, D. C., has offered a gold medal to the schoolboy or girl between the ages of 10 and 15 who writes the best composition, not to exceed 800 words, on the repair and maintenance of good earth roads. All compositions must be submitted to Mr. Page before May 15, 1913. Write on only one side of the paper, number each page, give age, name and address, and name and location of the school you are attending.

Butter Receipts.—According to the Crop Reporter for April, butter receipts in the six largest market centers in February were 20,490,000 pounds, as compared with 27,399,000 pounds for the same month last year. There were 7,427 pounds of butter in 14 warehouses reporting for March this year as compared with 9,486 pounds in a like number reporting for the same month last year.

Egg Supply.—The seven large market centers of the country reported receipt of 686,000 cases of eggs in February, as compared with 488,000 for the same month last year, and 609,000 the five-year average for the month of February.



Handed Down Through Three Generations

"Bull" Durham Tobacco was smoked by your great-grandfathers and their sons—by our grandfathers and their sons—and will be smoked by our grandsons and great-grandsons with the *same enjoyment* and *satisfaction.* This grand old tobacco is smoked by *more millions of men*, in pipe and cigarette, than all other high-grade tobaccos *combined!* No other tobacco has ever been able to take its place—and *none ever will!*

GENUINE
"BULL" DURHAM
SMOKING TOBACCO

(Forty "rollings" in each 5-cent muslin sack)

"Bull" Durham is the same today as it was 53 years ago—just pure, good, honest tobacco, with the natural, rich tobacco fragrance. Packed in the same plain, substantial *muslin sack.* "Bull" Durham smokers don't pay for painted tins or "premiums"—which they *cannot* smoke. They are *proud* of that homely, honest muslin sack, because they know the quality is *all in the tobacco*, where it *belongs!*

Get a 5-cent muslin sack at the nearest dealer's today—smoke a pipeful or roll a cigarette—and enjoy the cheapest, yet the most satisfying, luxury in the world. No matter where you are, you can always get "Bull" Durham—and get it *fresh.* It is sold by more dealers throughout the world than any other single article of commerce! And its sale is still increasing!

A book of "papers" FREE with each 5-cent muslin sack.

Blackwell's Durham Tobacco Co

Standard of the World since 1859!

DO YOUR OWN THRESHING

Every year individual threshing is becoming more popular. More grain better cleaned and no dangerous delay waiting for merchant thresher. Our Farquhar Rake Separator is especially designed for producing thorough service at minimum operating expense. Fewest possible parts, runs smooth and regular, every provision for clean threshing of all grains. We earnestly solicit investigation. Farquhar Threshers stand all tests. Three styles—20 to 40 inch cylinders. Also Saw Mills, Engines, Boilers, Gas Engines. Write for new catalog.

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Genasco
THE TRINIDAD-LAKE-ASPHALT
Ready Roofing

The proof of roofing is in its waterproofing. Genasco Roofing is made of Nature's everlasting waterproofer—Trinidad Lake asphalt.

It is rain-proof, sun-proof, wind-proof, heat-proof, cold-proof, acid-proof, and alkali-proof. And that means also that it is expense-proof.

Ask your dealer for Genasco. Look for the hemisphere trademark on the roll. Mineral or smooth surface—several weights. The **Kant-leak Kleet** is a patent fastener and waterproofer for roofing seams. Write us for Good Roof Guide Book and samples, free.

The Barber Asphalt Paving Company Philadelphia
Largest producers of asphalt, and largest manufacturers of ready roofing in the world.
New York Chicago
San Francisco

Trinidad Lake

PENNSYLVANIA FARMER

AGRICULTURE
THE KEYSTONE OF
NATIONAL PROSPERITY

ESTABLISHED 1880 PUBLISHED WEEKLY

VOL. 33.—No. 19. PHILADELPHIA, PA., SATURDAY, MAY 10, 1913. 50 CENTS A YEAR.

The Draft Breeds For Eastern Farmers

By Dr. CARL W. GAY,

State Director of Horse Breeding.

The opening of the present season has witnessed the addition of many new stallions to the breeding ranks in this state, and among the number are excellent representatives of each of the four great draft breeds, namely—Percheron, Belgian, Clydesdale and Shire.

The advent of a new stallion into a community is certain to lead to a discussion of the particular merits of the breed to which he belongs and a comparison with the relative merits of other breeds. In fact, the designation of "the best breed" is most eagerly sought by those interested, and considerable partisan spirit is manifested in such a discussion. That all horsemen do not advocate the same breed and are loyal in their support of the breed of their choice is as essential to the promotion of the breeds in general as is a second party in politics, or a scrub team to football. However, a strictly partisan basis is a narrow one, and an impartial review from the broadest viewpoint of the respective breeds should be of greater value in determining their importance to the breeder.

In the first place, a comparative estimate of the different breeds should only be made from a collection of the most representative individuals of each in the show ring and on the market, because one's experience or acquaintance with the breeds may be so limited as to be misleading. The relative excellence of local horses does not afford a fair comparison, since the representative of one breed may be far superior in every way to the representative of a contemporary breed and yet in no way express their comparative merits as breeds. A fair comparison can only be made among equally representative stallions, as for instance, the winners in class at the largest shows, while the real test of their true merits is the market, provided numbers and opportunities have been equal.

In fact, the market is the most logical point from which to view this entire situation, and we shall first take up the importance of the breed to the buyer. When the record price of $680 for a single gelding, or an average of $422 for a carload was made on the Chicago market, the breeding of the horses was hardly thought of until the records had been made, when, of course, there came from the breed associations their claims to the glory. The men who paid these prices had in mind certain specifications to which horses must measure up, and it was probably immaterial to them from what sources the characters they demanded had been derived.

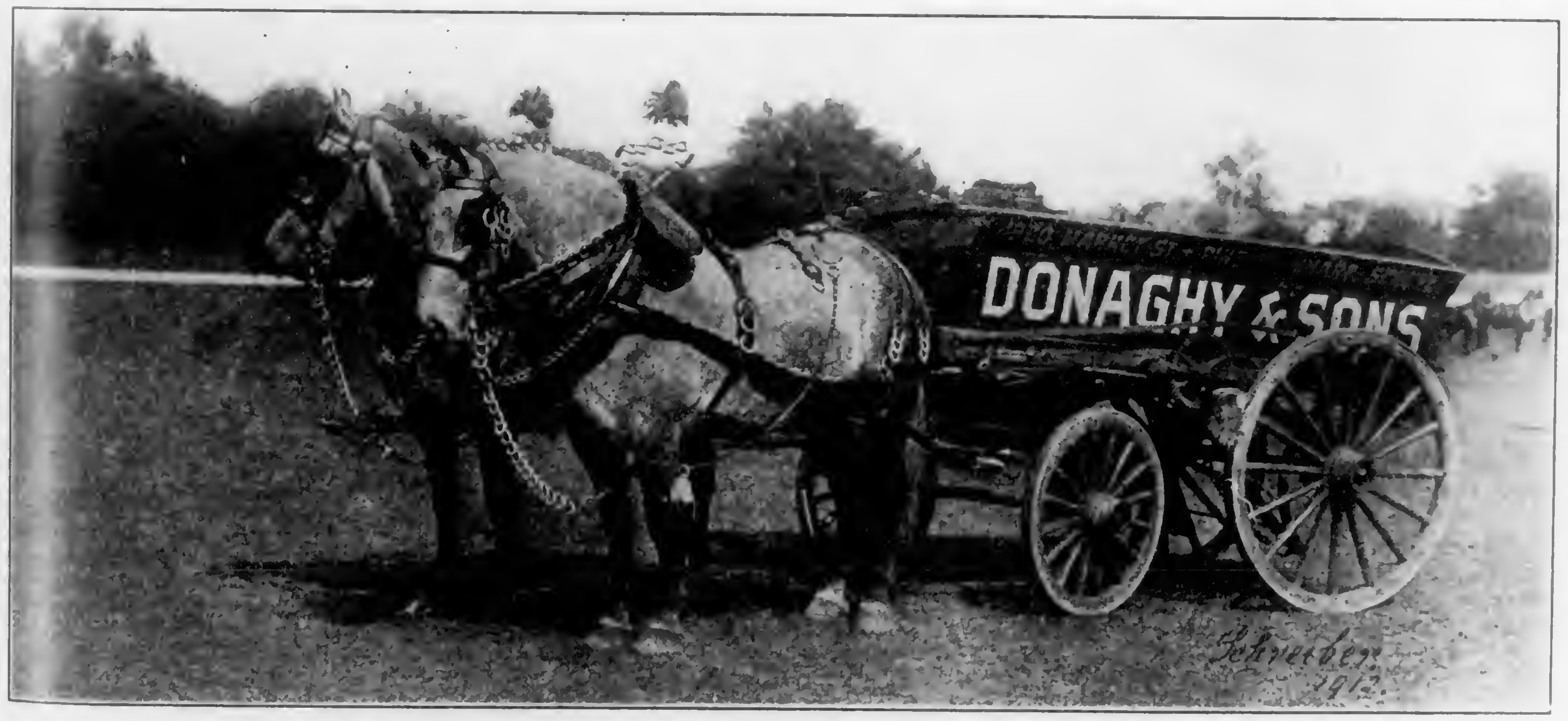
The buyer selects his horses for their trueness to type and individual excellence. It is most essential, first of all, that they be of the right sort, then the best of that kind, and while "breediness" in general is most desirable in every horse, the breed in particular is of little importance unless it has something to do with determining these most essential characters, type and individuality. There is no best breed; there is no breed which is not superior to any and all others in some one particular at least, and which is for that reason better adapted to certain requirements. It is, therefore, unfair to all to manifest a preference for any one unless the requirements are specified.

All of the characteristics possessed by the representatives of the different breeds may be classed as those common to all and those distinctive of each. Upon the latter depends a breed's superiority, or better, its greater capacity to meet certain requirements. It may be truely said that the less essential "breed characters" do not receive the consideration in horses that they do in most other classes of live stock, especially hogs and sheep. Furthermore, it is a fact that the more approved an individual of each breed is, the more they have in common as to type, conformation, quality, and way of going; things that mean most in determining a horses's value.

In order to determine to what extent breed characters may influence a breed's usefulness, it is necessary to note the factors upon which these characteristics depend. A breed owes its identity to three most important factors—namely, the foundation stock and subsequent out crosses, if any have been made; the environment under whose influence the breed has been developed, and the ideal toward which selection has been made. For example, the typical Percheron, by his size and draftiness, shows that the basis for his breed was in cold blood, while there is unmistakable evidence of the refining influence of the blood of the Orient about his head, his legs and feet, and in his temperament; while the principal differences between the Shire and the Cylde can be attributed to the contrast in soil, climate, etc., between the fen countries of England and Ayr and Lanark in Scotland, and to the Englishman's notion that weight and massiveness are of primary importance in the draft horse, while the Scotchman is willing to sacrifice something in these respects in order to secure the quality of bone, the pasterns, the hocks and the way of going for which the Clyde is noted.

Inasmuch as this combination of circumstances which has molded a type is not uniform in the case of all breeds, corresponding differences may be noticed among them, and these differences may be sufficient to render one breed well adapted to certain conditions for which another would be more or less unfit. It is a well-established principle in breeding that a radical cross is productive of most unsatisfactory results. Hence, the relation which the breeding of the mares bears to the foundation blood of a stallion must be considered, and to mate a stallion of one of the exclusively cold-blooded breeds with mares in which the blood of the trotter pre-

(Coutinued on page 3)

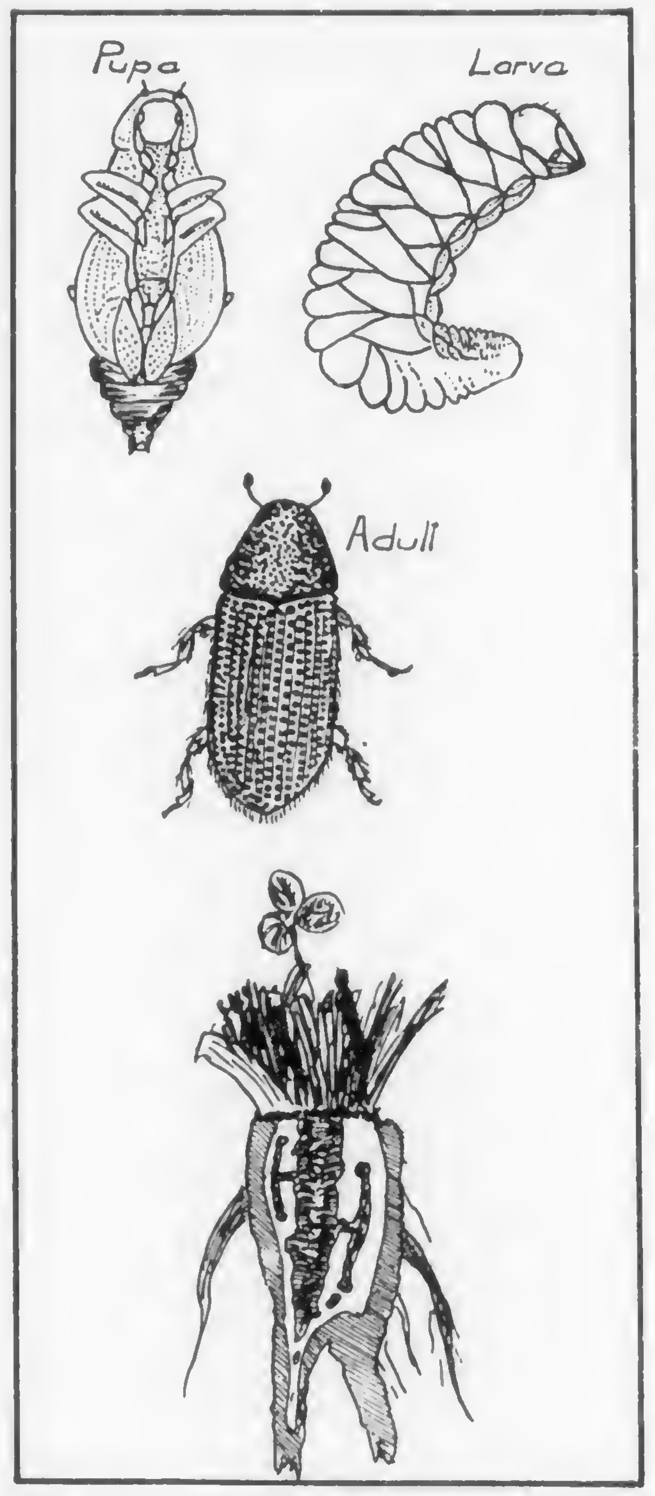


"TOP O' THE PHILADELPHIA MARKET," A PATTERN FOR EASTERN FARMER BREEDERS TO COPY.

THE CLOVER ROOT BORER

On many farms thruout the eastern states may be heard the complaint that the land is "clover sick" and clover will not grow as well as it used to do, or will not grow at all. This "clover sickness" has been the subject of much thought and study, but it is still a question to be definitely decided just what the cause is of this clover failure.

The trouble is noticed mostly on lands that have grown clover for a number of years, and is rarely if ever found upon virgin land or land which has been newly planted to clover. The fact suggests the idea that there really is some condition brought about in the soil by the continual growth of clover which renders the soil more or less unfavorable to further growth. Those who advocate the toxin theory, or the belief that every plant exudes certain toxins or poisons into the soil which are most poisonous to plants of the same species, find "clover sickness" a strong point for argument. The probabilities are, however, that this condition is the result of several causes rather than only one. Some now unknown soil condition is probably a great factor, and it is only a question of a few years until experimentation will have discovered this cause, and much of the "clover sickness" will no longer be a mystery.



THE THREE STAGES OF THE CLOVER ROOT BORER AND ITS WORK IN THE CLOVER ROOT

However, much of the failure of clover is due to the clover root borer (Hylastes obscurus), and unfortunately this small insect has spread to such an extent that in some sections clover growth is almost impossible. The clover root borer was imported from Europe about 1878, and has since increased with great rapidity. It attacks mammoth and red clovers mostly and alsike less commonly, altho it has been found on practically all the members of the clover family, including alfalfa. During the first year the plant is rarely injured, chiefly because it has not grown large enough to offer a good place to harbor the borers. After the first year the insect may be looked for, and is usually noticed by the lack of growth of the second crop and a wilting appearance of the first crop in severe cases. An affected plant wilts and dies, and when pulled up will often break off at the ground, leaving the roots in the soil. When the root is taken out and examined it will be found to be burrowed out from the crown down towards the tip, with lateral channels extending towards the outer edge of the root. The walls of these burrows are often decayed, and usually the insect, in one stage or another, can be found there. It is generally believed that the borer is responsible for the very ununiform blooming which is often seen in a clover field, and in an infested field the seed production is extremely low.

The beetle is very small, dark brown or almost black, hairy, and has tooth like growths on the outer end of the legs. The egg is only visible by the most careful observation, being very small and white, with a smooth, shining surface. The larva is a thick white "grub," with a yellow head and brown mouth. The pupa is also white, with two spine like projections at the end of the abdomen.

The adult beetle lays its eggs in hollows eaten out of the crown of the plant, usually from the middle of May until the middle of June. The larvae feed where they are hatched for a day or so, and then burrow down the root towards the tip, in which position they pupate. The larvae generally pupate before the end of August, and by the first of October most of the beetles have emerged.

There is only one satisfactory means of control for this insect, and that is to plow the infested field up immediately after the first crop has been removed. This exposes the insect to the elements when it is in the larval stage, and by removing its food supply starves it. It can be seen, however, that it is very important to plow the field up immediately, or else the larvae will have time to change into pupae, in which stage they require no food, and hence can not be exterminated. Fertilizers do not kill the borer, as is sometimes supposed, and hence are of no value in combatting this pest. Keep straggling growths of clover down so that the natural breeding places will be destroyed, and plow up infested fields immediately after the first crop and the borer can be exterminated. Much "clover sickness" will also then disappear. It must not be understood that the clover borer is the only cause of "clover sickness," a lack of lime often being a great a cause. However, the borer is undoubtedly a very important factor in many localities, and every effort should be made to exterminate it, by giving care to the details described above. This, in connection with lime applications will usually restore clover-

WEEKLY TOPICS FROM THE FARM.

The Home Garden.—We believe that too little attention is paid to the home garden. If a garden is worth having at all, why not make it one that not only gives us fresh vegetables all season but also produces enough extra to pay for itself? Market gardening is the most profitable branch of farming when carried on intensively, and while most of us do not have the soil nor market facilities to go into it as a business, we can very easily make the home garden pay. My neighbors' gardens are, I think, typical. They consist of about one-eighth acre, and receive little if any care, except to plant the crops and cultivate them. We have tried working the home garden on a business like plan and find that it pays well. Manure must be applied in liberal quantities; at the rate of 25 tons per acre is not too much; and a high grade commercial fertilizer, applied at about 1 ton per acre, must also be given. Then if the soil is well worked and in good tilth it is in condition to grow vegetables of quality. We have, by these intensive methods, grown enough fresh produce to supply our own needs and enough extra so that by selling locally we have made the home garden a big paying end of the farm.

Planting Potatoes.—We are getting the potato ground into shape for a 300-bushel crop this year. While we have never grown a 300-bushel crop, we are coming nearer to it every year and this season expect to realize that ambition. There are many farmers in our neighborhood and all over the state who plow their potatoes in. Of all the careless and indifferent practices found upon the farm, this one is most to be condemned. A farmer has no right to complain about the low prices the producer gets for his crops, nor the commission man, nor any other of the present day evils when he neglects his own business. I know of one man who plows his potatoes in every year and upholds the method because he gets generally about 100 bushels of potatoes, of which most are of inferior quality. If we can not grow at least 100 bushels of potatoes we are not making money on that crop, unless we are robbing the soil. A potato vine can not do its best or anywhere near its best unless it has a well-worked seed bed, and to plow the seed under is the same as broadcasting corn on a stubble field as far as the probable results are concerned. If you are so rushed that you can not thoroly prepare a large acreage, fit a small field thoroly, for it is better to have a small field well managed than a large one poorly so. In this connection, we want to advise our friends against a mistake we have made in the past. Be sure the seed is planted deep enough. If a planter is used care must be taken to get the pieces at least four inches below the surface, and the only way to do this is to have the field in fine tilth. Plenty of humus, plenty of cultivation, plenty of fertilizer and good spraying will bring the 300 bushels.—A Farmer.

MAINTAINING A WOODLOT ON FERTILE SOIL

By J. A. Ferguson, Professor of Forestry, State College, Pa.

An important question with farm owners who have a woodlot located on fertile soil, is whether it will pay them better in the long run to maintain the woodlot or to convert it into farm land. Such a question can be answered only for each individual tract, but there are several points of general application which must be considered in every case.

Probably of greatest importance is the question of the market for the products of the woodlot. Unless a woodlot is well located with respect to a market either lying near a city where high returns can be realized from the small stuff and the limbs as cordwood, or is located along a railroad over which the product can be readily shipped, there is no question but that greater returns can be secured from fertile land when devoted to the raising of farm crops.

But where there is a ready sale for all the products of the woodlot high returns can often be secured. This return is obtained at no cost of time or labor or expense to the owner. Such a return far exceeds an equal amount obtained from a farm crop on which the owner rarely figures in his time. As high as $12 a cord is paid in some cities for selected cordwood of hickory and white oak for burning in fireplaces.

The amount of wood product that can be secured each year from an acre of wooded land is another important point to consider. But few woodlots in this country yield more than a cord per acre per annum, or about 90 cubic feet of solid wood, and the majority yield far less. An owner can count on cutting each year only the amount that is laid on in a year, or the interest on his woodlot. If more is cut than actually grows each year the owner will be decreasing his forest capital, his growing stock, and will soon find that his woodlot is getting thin and running out.

Many woodlots, altho well located with respect to a market, do not yield a fair return for the use of the soil because of the small amount of wood laid on annually. This is due in part to the kind of trees grown in the woodlot. There is great variation in the rate of growth of different species of trees. Usually but little attention is paid by the owner to what trees shall grow in the woodlot. He leaves the choice to nature. As a result woodlots are filled with slow-growing trees often of poor quality and of little use. Another reason is that the conditions under which the trees are grown do not bring about the most rapid growth of the trees. Forest trees demand forest conditions in the soil, that is a moist, soft, spongy soil which is always found under a compact leaf canopy and where trees are growing vigorously. This condition of the soil and the resulting rapid growth of the trees is destroyed by fire and grazing. Unless a woodlot is yielding a high rate of interest in wood products there is no question but that a farm crop will give higher returns where located on fertile soil.

Under ordinary conditions it is not advisable to maintain fertile land in a woodlot. More can be obtained from the soil in other ways. But where there is an exceptional market, where the forest capital is large enough, and where the trees are of fast-growing species and conditions are favorable for their best growth, often as large returns can be obtained from a woodlot as from raising the ordinary farm crops.

Alfalfa Culture.—The Rhode Island Experiment Station has conducted very careful experiments on alfalfa, and has derived certain essential points in the culture of that plant that can well be adapted to other eastern states. They are: The use of seed of hardy strains, selection of land upon which water does not stand and freeze in winter, thoro preparation of the land, seeding very early in the spring, seeding with a nurse crop, the use of nitrate of soda at the start, liming, soil inoculation, the avoidance of late autumn cutting, no pasturing the first year, and cutting the crop at the right time. Details of these cultural methods can be found in Bulletin 152 of the Rhode Island Experiment Station, Kingston, R. I.

Live Stock

THE DRAFT BREEDS FOR EASTERN FARMERS

(Continued from page 1.)

[illegible] is not advisable. It would be better to gradually reduce the percentage of hot blood by the use of a draft stallion with some of it already in its makeup, if the former sort is continually to be used. In determining the best breed then, for certain requirements, the class of available mares should be specified.

Furthermore, if a permanent breeding stud is to be established in a given locality, the best results may be expected from using that breed whose native habitat has been most like that where the breeding is to be done. Even in the production of market geldings it is important to give some thought to this matter, as colts of the heaviest breeds require more abundant feed, more easily secured, and will not do as well rustling for themselves in rough, hilly pastures as will others to which these conditions are more natural. Finally, it must be borne in mind that buyers of horses are discriminating in favor of certain types, which vary in nature in different markets. Thus, whether the demand is for a horse whose specialty is [illegible] draft, or whose horse power to the extent of moving seven tons is the sole requirement, should influence one's opinion regarding the best breed.

It now remains to enumerate the distinctive characteristics of the four draft breeds with a view of indicating the requirements to which each is best adapted, in order that everyone interested may solve for himself the problem of which is the best breed for him.

The Percheron's origin in blood was a [illegible] Flemish base, upon which subsequent top crosses of hot Barb blood have been made. He is, therefore, the most refined, the most active, and originally the least drafty of all the breeds, and best adapted to mating with the average American mare for the production of market horses having the widest range of usefulness. La Perch, the district in France from which he comes, is medium as to topography, climate, etc., therefore, the Percheron is by nature most generally adaptable, so far as environment is concerned. This horse first achieved fame in the Diligence or stage coach service, for which purpose he was bred and selected and this old-fashioned diligence horse became recognized the world over as the rapid draft horse, par excellence. However, the displacement of the Diligence Coach by the railroads and the subsequent demand for a more powerful horse to take his place in agricultural and commercial pursuits, has resulted in the production of a larger horse which has more in common with the other draft breeds and, therefore, perhaps less intrinsic merit of the old type than formerly.

The Belgian, which comes from a locality in which the Flanders horse (the foundation source of all draft characteristics) was indigenous, is, so far as we know, a direct descendant of the latter. In his lymphatic temperament, his ponderousness and close conformity to the draft type, he is representative of his origin, altho lacking the feather and remarkable development of hair generally, which was characteristic of the Flemish horse. The farms in Belgium are small, with feed abundant; therefore, a leading feature of this breed is their capacity as "doers," to which they owe their popularity with the feeders. It has been frequently said that they represent a Dutchman's ideal, that is, they are "squatty" and the lowest set, deepest and most compactly made of any of our draft breeds, and their get are so characterized.

The Clydesdale and the Shire are probably very nearly identical in so far as their origin and blood is concerned, both having their prototype in the Norman war horse, reinforced in draft characters by the systematic infusion of Flemish blood. There is some evidence of a dip of hot blood in the case of the Clydesdale, but as there has been a continued exchange between the breeders of England and Scotland, the influence of such a cross, if any was made, has been largely lost. From a common beginning, however, two distinct ends have been attained in accord with the different conditions of life and ideals of the breeders in England and Scotland, already referred to. The counties of Lincolnshire and Cambridgeshire are characterized by the low land and damp atmosphere, which is productive of a rank growth of forage, and likewise great development, but of a rather low organization in the animal. In this connection it might be noted that the same counties have produced our largest breed of sheep.

On the other hand, the district in Scotland along the Clyde River is rather broken with some elevation, and the soil is a stiff clay, which together tend to the production of an organism of a more close knit, dense texture. Add to this the difference, already noted, in the English and the Scotch idea, and we have ample reason for the Shire being the biggest, in both bone and general scale, as well as most powerful of the draft horses, altho frequently excellence of this sort is secured at the sacrifice of quality; while the Clydesdale has a quality of bone, feather, a slope of pastern, form of foot, conformation and setting of hind legs, and a springy, snappy, straight way of going that distinguishes him from any other breed. Surpassing the Shire, as he does, in this respect, the latter has it over him, however, in general draftiness, which has been sacrificed in a degree to the quality and action already described.

The Suffolk, which does not average as great weight as the breeds already considered, is unique in the fact that all horses registered in the studbook of this breed trace to one individual, the Crisp Horse of Ufford. The chestnut color and the "punch" type (heavy body and short legs) of this horse have been transmitted to his progeny with great uniformity. These horses have been in demand on the farms of Suffolkshire, in central England where they originated, but they are regarded as essentially an agricultural horse and in a somewhat different class from the other draft breeds. Much is claimed for them in the way of persistence at the collar, capacity to consume enough feed at night and morning to enable them to work all day in the field, and a most tractable disposition.

While there is no one best breed, a fair and equitable study of each leads to the following conclusions, viz:

(a) The Percheron is more generally adapted to a wider range of conditions as concerns geographical distribution, the class of mares to be bred and the salability of all of his get than any other breed.

(b) If grade draft horses are inclined to be leggy and light middled, this deficiency in the matter of draft type can be most uniformly corrected in their progeny by breeding them to Belgian stallions, which are rapidly demonstrating their worth in the class of their get.

(c) On mares which are of the low down, massive sort, but show a lack of breeding in round, coarse bone, straight shoulders and pasterns, ill shaped, meaty hocks, and a short stilted stride, the Clydesdale can be expected to do more in the way of improvement than any other breed.

(d) It has been very appropriately said that "You can not get bone without a bit of feather"; for mares which possess more quality than substance, a Shire is to be commended. In fact, grade Shire mares are the dams of some of the best heavy geldings that go to market.

(e) Stallions of the Suffolk breed are not very numerous in this country and their merits have not been so extensively exploited, but they seem to be worthy of consideration by those breeders who are aiming to supply a demand for farm horses.

The selection of the stallion based on such information as this would only be advisable, however, in cases where the available representatives of each breed were equally typical of their respective breeds. Under ordinary circumstances, the man who is breeding but a few grades for the market can not afford to attach too much importance to the relative merits of the breeds to which the different stallions available to his use belong. Unfortunately, there are not many localities where there are five equally good draft stallions of different breeds. A most practical conclusion therefore, is to the effect that there are good individuals and good sires in every breed, and that in the average run of cases too much consideration should not be given to breed popularity, but the best horse should be patronized, irrespective of the breed to which he belongs. Breeds are only of importance as they insure to us better horses; therefore, the type and individuality of the stallion and of his get are of greater consequence than the breed, and the mare owner who, like the dyed-in-the-wool politician, would breed only to a stallion of one breed, and under no circumstances patronize a horse of a certain other, is practising a most short-sighted policy, presumably to his own detriment.

Feeding Corn Silage.—The Iowa Experiment Station, Ames, Iowa, has conducted a series of experiments on the value of corn silage for farm animals. It is found that the milk from silage-fed cows is not inferior in flavor or odor to that from those fed dry feed. For beef cattle the addition of corn silage to the ration not only greatly decreases the cost of gains, but usually makes them more rapidly. For yearling sheep a ration of $1\frac{1}{2}$ lbs. of grain, 2 to 3 lbs. of silage and about 2 lbs. of clover or alfalfa hay would prove satisfactory. Details of these experiments are published in Circular 6.

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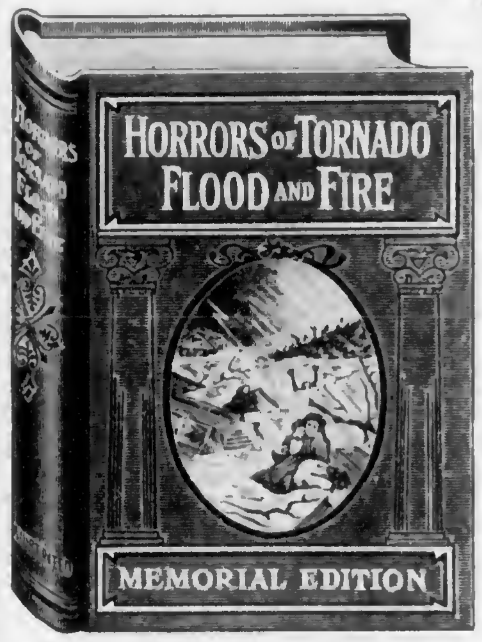

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TIGHT BINDING

The Cultivation and Fertilization of the Orchard.

By SHELDON W. FUNK, Berks Co., Pa.

(Continued from last week.)

In regard to the fertilization of the orchard we have a problem which must be worked out to a great extent by each individual himself. There are possibly a few orchards in Pennsylvania where fertilization would prove of very little value, but in the majority of cases it is essential to success, and should be practiced to a greater extent than it is. We, of course, all realize that moisture is the great governing factor in plant or tree growth, but even an abundance of moisture does not suffice when we have a shortage of nitrogen, phosphoric acid or potash. These three elements are very essential to the trees' growth and where we do not have a sufficient amount in the soil they must be supplied. Now then, how much and what kind are we going to apply? That will depend entirely upon our conditions, and there is no place in which it pays better to experiment than in fertilization, so that we may eventually learn what combinations are the most economical for us to use and best adapted to our soil conditions. It is foolish for one man to prescribe the best fertilizer for another man, unless he is acquainted with his soil conditions and the best way to determine our soil needs is to carefully watch the growth of our trees. Nitrogen is mainly a wood-producing element. Therefore, when our trees are making a vigorous growth and are covered with dark green leaves we know that we have a sufficient amount of nitrogen present; if the opposite conditions are the case, then nitrogen must be applied. It is often thought that nitrogen reduces the color of the apples, but this is true only in an indirect manner , as it produces more foliage and causes the fruit to ripen a little later. Color, particularly upon the red apples, is mainly dependent upon the amount of sunshine. With the yellow apple it seems to depend a little more upon the state of maturity. The majority of bearing orchards will stand considerable nitrogen. Phosphoric acid and potash are elements which enter more into the construction of the seed and fruit. The soils of Pennsylvania in the majority of cases are deficient in phosphoric acid, while many of us have been applying more potash than was actually needed. It was formerly supposed that potash added color to apples, but that has been found not to be the case.

PEAR ORCHARD IN FULL BLOOM.
On Farm of Florence Fralinger, Cumberland Co., N. J.

In regard to the sources of these different elements, good stable manure is of course one of the best materials we can use, particularly upon the sod mulch orchard. In most cases however good manure can not be procured, and we must turn to the commercial fertilizers I prefer to secure about one-half of the nitrogen from nitrate of soda and the other half from blood, tankage or fish scrap. Heretofore we have used acid rock as the carrier of our phosphoric acid, and it has given very good results, but this year we are using basic slag, which not only carries about 18 percent of phosphoric acid, but also from 35 to 50 percent of lime. When using slag with any organic form of nitrogen, as blood or tankage, do not let the material stand any length of time after mixing as the lime in the slag will tend to drive off the ammonia. Muriate of potash is just as good for trees as sulfate and costs considerably less.

A good formula to be used on apples in many sections is a 5-40-5 material. In a good bearing orchard use from 400 to 500 pounds to the acre. On young trees you do not need nearly so much; 150 pounds to the acre is sufficient the first few years. The fertilizer should be spread evenly around the trees just before cultivating. Do not place it too near the trunk, but spread out beyond the limbs. Trees under the sod mulch system usually require a little more fertilizer than when cultivated, because here you should not only spread it around the tree but over the entire orchard so as to maintain your mulch supply.

In traveling over the State of Pennsylvania in institute work, I find many old orchards that are simply starving to death. The owner has been trying to grow apples and hay on the same ground and the results are no better than to try and grow corn and hay together. Such old orchards should be plowed 3 or 4 inches, given 500 pounds of the above-mentioned fertilizer per acre and then cultivated for several years. Apply your fertilizer to apple trees just about the time that the petals begin to fall. Mix your own fertilizers; you can do it satisfactorily and it is money easily earned. I have saved as much as from $10 to $13 per ton on the above-mentioned formula.

THE CURRANT WORM

Of all the pests of the small fruit garden the common currant worms are the most troublesome. They come in such great numbers and have such a voracious appetite that they often defoliate a whole row of currants or gooseberries before the owner is aware of their presence.

As a matter of fact, they are not difficult to control if taken in time. The worms are the larvae of a saw fly, which comes out of the ground and lays her eggs on the new leaves, mostly at the base of the bush near the ground. During the first real warm weather in the spring, usually about the first part of May, these eggs hatch and the young worms, which are then only about one-fourth of an inch in length, commence feeding on the lower most leaves and in the interior of the plant. They have usually been present for several days before being noticed, and by that time have grown to nearly full size and are difficult to control.

To insure success in controling this insect, spraying should begin before they really appear, and as they are about as sure to some as death and taxes, there is little likelihood that it will not be necessary. It is perfectly safe to use arsenate of lead for the first spraying. It should be used at the rate of 2½ pounds (paste) to 50 gallons of water, and should be applied at least a week before the worms usually appear. Since the eggs are laid on the lower leaves and the worms begin to eat these, special pains should be taken to see that the lower leaves and those in the interior of the plant are fully coated with the mixture. When first hatched the worms are very easily killed by the poison, and if well done at the proper time there is rarely need for more than this one spraying. If necessary, however, another spraying may be given two weeks later.

After the fruit is half grown there is a possibility of danger from spraying with an arsenical. If necessary to spray at this time—but it will not be if the previous sprayings have been properly done—use white hellebore. This is a vegetable poison effective against insects, but much less dangerous to the higher animals. It also loses its poisonous properties rapidly upon exposure to air. Use at the rate of 1 ounce to 1 gallon of water, or mix with 10 parts of flour or air-slaked lime, and dust on the plants. It may be safely used when necessary up to within a few days of harvesting. If used as a solution, it is less liable to stain the fruit.—Prof. W. J. Wright, New York State School of Agriculture.

COMMERCIAL PICKLE GROWING

Judging from the small number of Pennsylvania market gardeners who grow cucumbers for pickles, it would seem that few of them realize the profit there is in this branch of vegetable work.

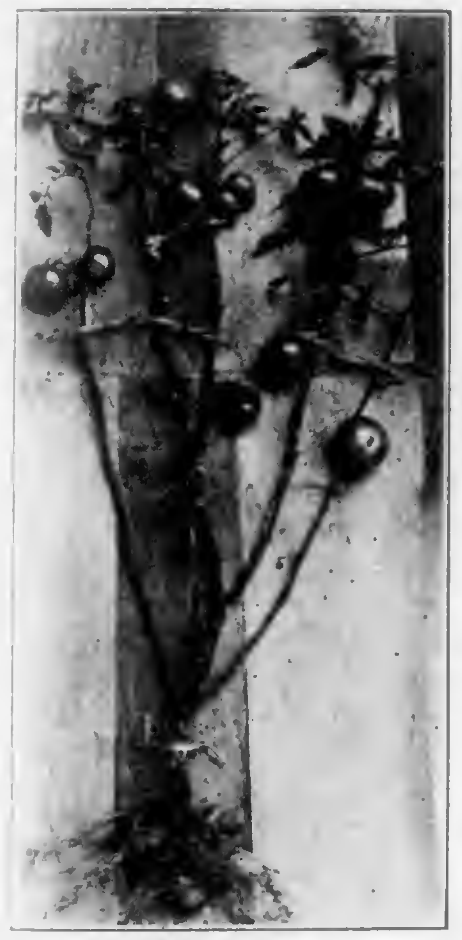
Mr. William Schruers, who resides within the limits of Oil City, Pa., and who for the past 25 years has operated what is known as the Oil City Gardens, comprising several acres of land, has shown some wonderful results in pickle work.

The soil on Mr. Schruers' farm is of gravelly or clay loam, which type of soil seems better suited to the growing of cucumbers for pickles than a sandy loam.

The selection of seed is looked after carefully each year. A small strip about 100 feet long and containing several rows is set aside for a seed bed. The cucumbers from this plot are allowed to mature, and from the largest and most uniform fruit selection of seed is made. Mr. Schrurers has found thru experimenting that two-year-old seed does best. One-year-old seed gives heavy vine growth and not so many cucumbers. The principal variety used is the Boston Pickler, from which several good strains have been developed thru careful work in the seed plot. Boston Pickler has been found to be a superior variety over others for the production of pickles.

The soil is prepared as for any hoe crop. About 50 tons of manure to the acre are used, and little or no commercial fertilizer. The manure is broad casted and the ground is then plowed and harrowed. The plowing may be done in May, after the early crops are in. After plowing, the ground is marked off in rows about six feet apart. While some desire hill rows six feet apart and the plants three feet apart in the rows, the plan used in the Oil City Gardens is to drill the rows in thickly. When the seed is thus drilled in many of the insect pests are killed by exposure or by burying to considerable depth. Most of these pests hibernate in the larva or pupa stage, and it is in this stage that their destruction is readily accomplished. Before the plants send out laterals they are thinned, so as to be six or eight feet apart in the row.

Until the plants develop laterals they are cultivated by hoeing. The growth of the plant soon reduces the distance in the rows to two or three feet, when cultivation must cease, owing to the danger of cutting off the tips of the laterals and thus giving the plants a serious check. The cucumber bears both staminate and pistillate flowers. In a fairly dry season the plants will produce better than in damp weather, due doubtless to better work on the part of the bees in pollinating.



The planting may be distributed over several weeks' time ,beginning with the 1st of June and continuing until June [illegible] or thereabouts. In this way there will be a succession of yields. The earliest planted seeds bring the vines into bearing about August 5th, and the crop continues from that time until frost kills the vines.

Mr. Schruers has had little trouble with cucumber blight. When necessary bordeaux mixture, 3-6-50 formula, is used. This does not burn the leaves, as is likely to be the case with the ordinary 4-4-50 formula. Beginning at the time the laterals first start bordeaux is applied two or three times, applications being about 10 days apart. The grower in question has adopted a whitewash sprayer consisting of a wheel sprayer operated on a truck. This machine is narrow and may readily be used between the vines without injuring them.

The harvesting is begun in the early part of August. To sever the pickles from the vines a small, sharp paring knife is used. A short stem is left on the pickles, as they have been found to keep better when this is done. If boys are employed to do the work, they should be instructed not to tramp on the vines and thus to injure them. Two persons are put on each row, one on each side.

Schruers has adopted the method of cutting the pickles in the morning, just after the dew is off. In this way most of the picking is over by 11 o'clock, and the remainder of the forenoon is given over to sorting and loading on the wagons ready for marketing in the afternoon. Fruit of all sizes is picked, from the gherkins, which are about one inch in length, to the fruit which is five inches in length. Cucumbers are never allowed to mature, as they sap the vitality which would otherwise go to the development of the smaller fruit. They must therefore be picked at least every other day, and sometimes every day. After picking, the fruit is put in piles on the grass and sorted, the larger ones first. There will usually be some cucumbers among them, which are set aside and sold separately. The pickers help to do the sorting, two men to a pile.

To market, half-bushel and bushel baskets are employed. The beskets are of oak construction and will stand the strain imposed upon them by the fruit. As the cucumbers are sorted they are counted. Five cucumbers are picked out at a time and deposited in the basket, about 300 of the smaller size being necessary to fill a bushel basket, or about 150 of the larger ones.

Orders are taken chiefly by telephone and are filled in rotation, according to the time of placing. The orders are delivered the day the fruit is cut, so as to get to the customers in good condition and in time to allow the pickles to be soaked in brine overnight. The pickles are marketed entirely in the districts in and around Oil City, and no factories are supplied. They are delivered by wagon, hence no profits are eaten up by a middleman. Orders are often held over from year to year, and never has Schruers had a surplus of pickles. The pickles sell for 35 cents a hundred; or in the case of dill pickles, 50 cents a hundred or 300 for $1.00.

The cucumber crop is rotated each year with other garden crops. In this particular it might be mentioned that crops accessory to pickles are grown on the ground owned by Mr. Schruers, such as pickling onions, dill, peppers, cauliflower, celery, cabbage, tomatoes and horseradish. These are always in demand and command good prices along with the cucumbers. Many a housewife will be led to buy one or more of these accessories to go with the pickles which she puts up.

Many of the sales are in the form of sample orders, which may include one like the following: 300 pickles, 2 heads cauliflower, 1 bunch of celery, 2 dozen peppers, 3 quarts of pickling onions, dill, horseradish.

Mr. Schruers keeps his help during the entire season by paying them a lump sum for the entire season or by the week, and thus obviates the transient help difficulty. The yields per acre on this tract of land averages 90,000 pickles, with a profit of $300 per acre.—C. M. Arthur, State College, Pa.

TOMATOES ON POTATO STALK

The accompanying illustration shows the interesting result obtained by grafting a tomato plant onto a potato stalk. The work was done and the photograph provided by George Hursh Rupp, Cumberland Co., Pa. The illustration is of interest mainly as showing that two plants of the same class can thus be successfully grafted.

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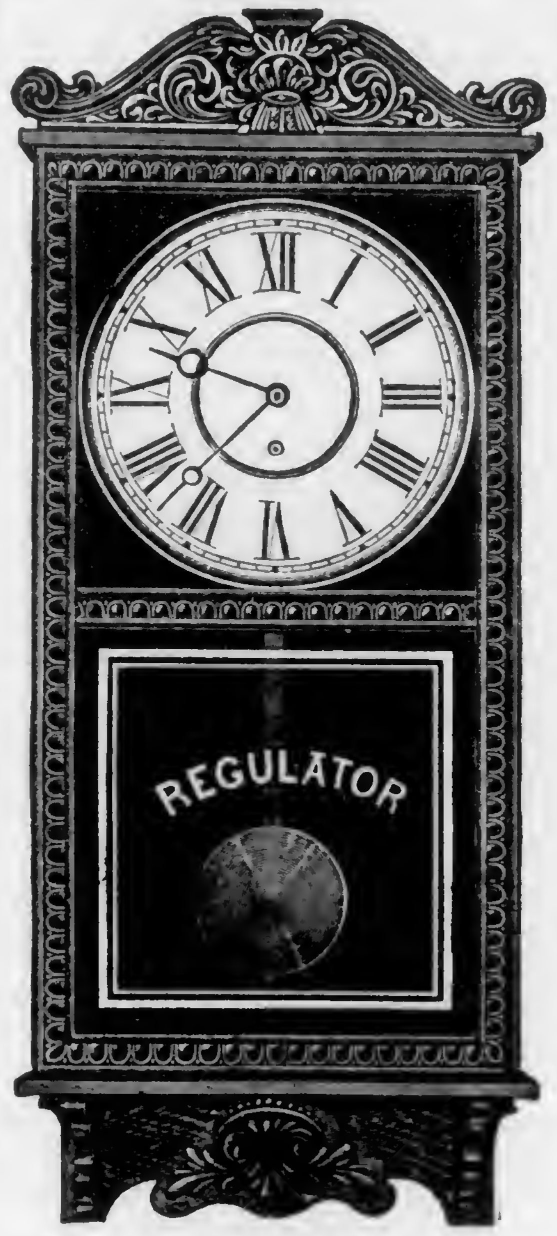

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Dairy Ration and How to Balance Them.

By ERNEST L. ANTHONY, Dairy Husbandry Department, Pennsylvania State College.

No. 4.—Balanced Rations

The figuring out a balanced ration from a theoretical standpoint is one thing and the trying to combine the several feeds that one may have on hand so that we get the best ration from them in its economical form is quite another thing. There are quite a number of farmers in this state at present who would like to use other feeds than they are now using, but they find that they have on hand an over abundance of perhaps oats or buckwheat middlings of corn, and feel that they must use these feeds up rather than go to the expense of buying a lot of new feeds.

In consequence, they are feeding a mixture of at least two of these in about an equal mixture. They are finding that they are not getting the results that they should. They are, of course, anxious to know how they can change their feeds or their mixture so that it will be better. If we take a mixture of oats and cornmeal, 2 parts cornmeal to 1 of oats, which is a very common feed used for cows on many farms, we find by balancing up this ration that it is much too wide or does not contain enough protein.

Lbs.	Protein	Therms Net Energy	Cost Net Energy
200 cornmeal	8	144	$2.55
100 oats, ground..	8	66	1.25
300 mixture	16	210	$3.70

Ratio 1 to 13. Cost per 100 therms net energy, $1.76.

Our ratio in this case is very wide, 1 to 13. No matter how this may be fed it will not give the desired results, because in each day's feed there is not enough for the maximum milk production. This ration, to give the best results, must have some high protein feed added to it. Oil meal might be used. But if it was used to get our ration to balance down to 1 to 4.5, which is about right to use, we find that we would have to use 300 pounds oil meal. This would make our feed half oil meal, which would not do, as we should never use more than 1 to 1½ pounds of oil meal in each feeding. If our cows were producing 20 pounds milk per day, feeding three pounds grain mixture to each three pounds milk produced, we would have to feed 6.5 pounds grain. This would give us our three pounds oil meal, which would never do. Also, as the net energy in the oil meal is high, it would make our ration too costly.

So we must look about for some more feasible feed. Cottonseed might be used. If used, it would take 175 pounds to make our total mixture of 200 pounds corn meal, 100 pounds oats and 175 pounds cottonseed, have a ratio of protein to net energy of 1 to 4.7, which was about that which our 300 pounds of oil meal gave us. The mixture is only roughly one third cottonseed. As we can feed as much as three pounds of cottonseed each day, this will let us feed all ordinary amounts without danger. The cost of the energy has been cheapened in this from $2.30 per 100 therms to $1.78.

If a herd of 20 cows were being fed the mixture with oil meal, and were averaging 20 pounds milk per day, we would have to feed 6.5 pounds of the grain mixture to each 120 pounds grain each day. This is a total of 840 pounds each week and would contain 609 therms. As our saving on the cottonseed mixture over the oil meal mixture was $0.62 per 100 therms, we would have a saving here of $3.77 each week in our feed bill. Besides this saving we would have a much safer mixture to use. Following are a number of mixtures which may serve most dairymen, or at least suggest mixtures if to be compounded from feeds on hand:

1 to 4 Mixtures

Lbs.	Protein	Therms Net Energy
300 brewers' grains.....	57	180
200 corn meal..........	14	176
100 cottonseed	35	84
100 gluten	20	79
700	126	519
200 brewers' grains.....	38	120
100 cottonseed	35	84
200 corn and Cob meal..	8	144
100 gluten	20	79
600	101	427
100 corn meal	7	88
100 linseed	29	75
100 cottonseed	35	84
100 oats	8	88
400	79	335
100 corn meal	7	88
100 cottonseed	35	84
25 linseed	7	14
200 wheat bran	20	96
425	69	282

1 to 4.5 Mixtures

Lbs.	Protein	Therms Net Energy
400 buckwheat	88	304
400 corn and cob meal..	16	288
100 cottonseed	35	84
100 linseed	29	75
1,000	168	751
200 buckwheat mid......	41	152
300 corn and cob.......	12	216
120 cottonseed	42	99
100 gluten	20	79
720	118	546
275 corn meal	19	242
150 cottonseed	32	126
200 distillers' grain.....	44	158
100 gluten	20	79
725	135	605

1 to 5 Mixtures

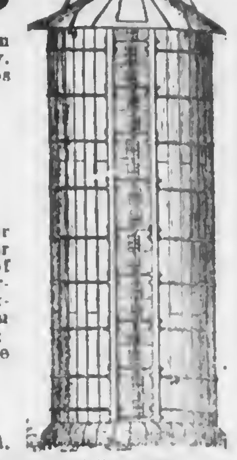
Lbs.	Protein	Therms Net Energy
300 corn meal	21	263
300 oil meal............	87	225
200 oats	16	132
400 wheat bran	40	192
1,200	164	813
100 brewers' grains....	19	60
300 corn meal..........	21	264
100 cottonseed	35	84
100 gluten	20	79
600	95	487
100 buckwheat mid.....	22	76
200 corn meal..........	14	176
75 cottonseed	21	63
100 distillers' grains...	22	79
475	82	394
400 corn and cob.......	16	288
100 cottonseed	35	84
300 distillers' grains...	66	237
100 gluten	20	79
900	137	688

In the rations given above we have used just the commercial feeds that are most always found on farms, or that can be easily secured, as it is our intention to keep our work and explanation entirely on a practical basis for every farmer. All of these rations are well balanced as to palatability, desirable feeds and medium cheapness in cost. This latter depends entirely upon the cost of the different feeds in each community.

Below is given table No. 7, which gives the exact digestible protein and net energy values in a large number of the feeds which are used for feeding purposes. They differ slightly from these given for many of the grain mixtures in table No. 2. This is because in this last table the exact values in tenths or less are given, while in Table No. 2 only the whole numbers are given. The use of the whole numbers is sufficiently accurate for all practical purposes.

Table No. 7.—For the Exact Calculation of Individual Rations, Digestible Protein and Energy Values per 100 Pounds

Feeding Stuff.	Digestible true protein. Lbs.	Energy value. Therms.
Green fodder and silage:		
Alfalfa	2.50	12.45
Clover—crimson	2.19	11.30
Clover—red	2.21	16.17
Corn fodder—green..	.41	12.44
Corn silage	0.88	16.56
Hungarian grass ...	1.33	14.76
Rape	2.16	11.43
Rye	1.44	11.63
Timothy	1.04	19.08
Hay and dry coarse fodders:		
Alfalfa hay	6.93	34.41
Clover hay—red	5.41	34.74
Corn forage, field cured	2.13	30.53
Corn stover	1.80	26.53
Cowpea hay	8.57	40.76
Hungarian hay	3.00	44.03
Oat hay	2.59	26.97
Soy bean hay......	7.68	38.65
Timothy hay	2.05	33.56
Straws:		
Oat straw	1.09	21.21
Rye straw	.63	20.87
Wheat straw	.37	16.56
Roots and tubers:		
Carrots	.37	7.82
Mangel-wurzls	.14	4.62
Potatoes	.45	18.05
Rutabagas	.88	8.00
Turnips	.22	5.74
Grains		
Barley	8.37	80.75
Corn	6.79	88.84
Corn and cob meal..	4.53	72.05
Oats	8.36	66.27
Pea meal	16.77	71.75
Rye	8.12	81.72
Wheat	8.90	82.63
By-products:		
Brewers' grains—dried	19.04	60.01
Brewers' grains—wet	3.81	14.82
Buckwheat mids.....	22.34	75.92
Cottonseed meal.....	35.15	84.20
Distillers' grains—dried—		
Principally corn...	21.93	79.23
Principally rye....	10.38	60.93
Gluten feed—dry....	19.95	79.32
Gluten meal — Buffalo	21.56	88.80
Gluten meal — Chicago	33.39	78.49
Linseed meal — old process	27.54	78.92
Linseed meal — new process	29.26	74.67
Malt sprouts	12.36	46.33
Rye bran	11.35	56.65
Sugar-beet pulp—fresh	.63	7.77
Sugar-beet pulp—dried	6.80	60.10
Wheat bran	10.21	48.23
Wheat middlings....	12.79	77.65



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In the series of articles which have just ended it has been our aim to explain in as clear a way as possible the arranging and computing of a "balanced ration" for dairy cows along the most accurate lines. Any questions which are not clear in the mind of any reader will be very gladly explained thru these columns.

RAISING AND FEEDING DAIRY CALVES

In raising calves for the dairy a rigid system of selection should be observed, as determined by a careful study of the dairy ability of the dams and granddams on both sides. Often a dairyman will raise all of his heifer-calves without regard to their breeding and individuality, while a neighbor will destroy all of his. How much better it would be if the very best calves in both herds could be raised, and all the poorer ones killed. This idea is being worked out in many sections where local cow-testing associations are being operated. Thru the results of these associations accurate knowledge of the dairy qualities of the ancestry of the calves is required.

I believe that the calf should be left with its mother two or three days, for three reasons: First, I think the cow has a right to her calf for the first few days; second, the fine dairy cow is a highly nervous animal, and taking her calf away is liable to cause milk fever; third Nature has stored up in the udder a secretion called colostrum, which acts as a gentle purge and helps to regulate the digestive system of the calf—it suckles frequently and gets a good start without overloading its stomach at one time.

Inflammation of the udder is relieved by the calf sucking. It is important to see that the young calf does not overeat, as this may cause "scouring" and derangement of its digestion. When its belly is distended, remove it from the cow and gently strip her until she is dry. I always let the calf have the first milk, and I do not strip the cow dry for the first 24 hours. If this method is practiced there is little danger of milk fever. In three days, or as soon as the milk is fit for use, take the calf away. A sensible plan is to tie the calf where the cow can see it. Teach her that you are her friend and that you will not hurt her calf.

Do not think because it is an extra choice calf that it should have all it will eat. For three weeks I feed the whole milk as it comes from the cow, at a temperature of 98 degrees, three times a day and about two quarts to a feed with about one-half ration at noon. If a small calf, feed accordingly. After three weeks, two feeds will do and the whole milk may be gradually changed to skim-milk.

Do not think because the milk has been skimmed that it is necessary to increase the amount. The protein in the milk forms a very important part of the ration. The separator removes the cream; but at the same time it condenses the protein. If the separator removes one quart of cream from five quarts of milk, nearly all of the protein contained in the five quarts of whole milk stays in the four quarts of skim-milk, which becomes richer in protein than the whole milk. We need to recognize this fact in feeding young calves or we will be quite apt to overfeed.

How to replace the carbohydrates in the cream is a problem for us to solve. Use oatmeal with the hulls sifted out, and old process linseed-oil meal, altho many feeders have good results with the calf foods. The calves should have some choice hay (red clover or alfalfa preferable) within easy reach, and access to dry grain foods at all times. As soon as they will eat tiny bits of hay and dry bran and oats there will be little danger of their becoming deranged or off feed, if given ordinary good management.

I feed dry grains immediately after feeding the milk ration, because I find that it prevents the vicious habit of ear-sucking. The calves are not to blame for this habit, for fast eating does not give the food an opportunity to become mixed with the saliva and the calf immediately seeks something to relieve its mouth of the salive. Keep the calves tied until they are old enough to eat dry grains; once they have learned to do that, they are not likely to pick up the habit of ear-sucking.

Icy water is one of the worst things that can be given the calf. Skim milk returned from the creamery, where it stands and gets chilled and, possibly is mixed with milk from diseased herds, is not to be compared with skim-milk separated at home and fed warm.

The pens and stables should be kept clean and the bedding changed every two or three days, so that they will not be compelled to lie on a damp bed or breathe the fumes of urine under them. They need plenty of light and sunshine, for sunshine is a great invigorator and stimulator for all young animals. Do not turn them out to grass in the first warm weather. The very best calves are the ones that are kept inside until after the grass has dried down a bit and then only allowed to graze for an hour or two a day until they have become used to the change.

I believe that the dairy heifers that will best meet the demands of the future are the ones that have been developed largely on a ration of forage and a small amount of home-grown grain foods. the price of all grain foods makes their exclusive use as a source of protein almost prohibitive, hence the desirability of having cows that are capable of making a more profitable use of such protein forage crops as clover and alfalfa, in connection with properly made silage and a small amount of good wholesome grain foods.—W. Milton Kelly.

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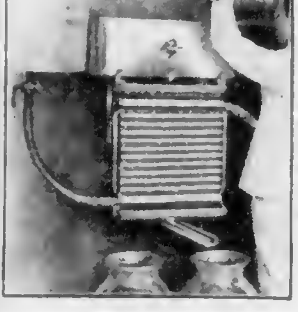

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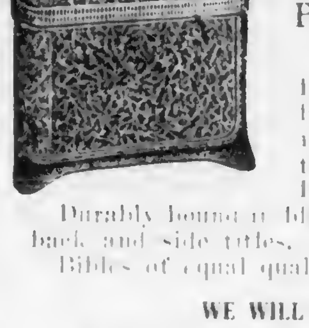

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PENNSYLVANIA FARMER, 214 South 12th Street, Philadelphia, Pa.

Poultry

CARE IN THE COLONY HOUSE

After three weeks of anxious care the chicks are ready for the brooders. Bringing chicks out of the shell is, relatively, a simple operation, every phase of which is, or should be, under the control of the operator; but to raise the youngsters without undue loss is a problem to tax the wisest. So many factors enter, so many unknown quantities must be dealt with, that it is not surprising that many fail, but a few succeed.

Given livable chicks, the poultryman is only at the beginning of his task. Conditions are so different when the attempt is made to rear chicks in large units that not much help can be derived from a study of the ways of the old hen. Largely, one can learn what not to do; because the hen can not choose her methods, but must work with the tools Nature has given her. For the small flock she mothers she is fairly successful; yet I have noticed that she loses, with rare exceptions, from 10 percent to 50 percent of her clutch before the birds are large enough to shift for themselves. These percentages are large, but not impressive when applied to ten or a dozen chicks; apply them, however, to 100 or 1,000 and the loss is enormous.

A NEW CHICKEN CROP CARED FOR BY AN AUTOMATIC BROODER.

From the incubator the chicks go to the brooder, and the mischief begins. There are a few brooders on the market that are fair; there are others, not on the market, that are better; while the future must hold in store brooding devices so superior that much of the present disaster will be a thing of the past. I have long believed that the designer of a brooder will succeed in proportion as he gets away from the idea of imitating the hen. Because the hen, perforce, uses a curtain of feathers to surround her flock, brooders have cut bales of cloth into scallops, sure traps for dust and dirt, foul odors and germs of disease. The reasoning that prompts this is, to say the least, puerile. It has been shown that no such contrivances are needed for the comfort of the birds, and every sense, almost, will tell you they are unsanitary. Cleanliness is essential, and the fewer things in a brooder to hinder cleaning, the more likely the right conditions will be maintained. I have heard of persons who cover head and all in bed on a cold night; it must be equivalent to being brooded under a curtained hovel. These three things are essential for the thriving of all higher animals: Pure air, the proper degree of heat, and dry quarters. Their opposites play havoc everywhere. Perhaps the chief of these essentials is pure air. Until recently it was well-nigh impossible to maintain a cage of monkeys in health in the Zoo; being natives of tropic climates it was thought they must be housed in very warm quarters, to withstand northern conditions. It was a surprise to learn that outdoor weather, even in midwinter, was not harmful to them but essential to life.

Some time ago, when first I tried to "imitate the old hen," my chicks were reasonably sure to be killed off by so-celled "leg weakness." We do better now. It is quite possible, in a normal year, to raise more than 90 percent of the chicks hatched, but it is quite usual to raise less than 50 percent. There is a reason.

After a term in the brooder, the brood is ready for the colony coop. The young chicks, accustomed to steam heat and other comforts, are suddenly thrust out into the unfeeling world and made to hustle for life. If the weather is mild and summery, as often happens when April smiles, all is well; but cold winds and colder rains generally follow and much damage is done.

Omitting further discussion of the proper brooder, let me briefly tell how to make the colony coop a useful adjunct in the poultry yard. It should be plain that it is not safe, in our extremely changeable climate, to transfer chicks from a warmed nursery to an unheated coop unless then remain in the brooder longer than is advisable or economical. They need more space than the average brooder affords, and with it more air, and the larger colony coop is the proper place for them if rightly made.

A house, 4 feet by 8; the front 28 inches high, the rear 18 inches; a window that may swing wide at one end of the front; a spacious door with a smaller window in the top, at the other; a roof that slopes toward the north, hinged on the north wall and hooked down on the front; a leg one foot long at each corner; the windows guarded with wire netting of small mesh; a hole in the floor near the window end, 5 inches in diameter; a box under the hole that may easily slide in or out, and that is the colony brooder. Legs under such a house serve a useful purpose. They raise the floor above dampness and possible flooding; they prevent the hiding of rats and other undesirable citizens; enclosed with boards or with netting on three sides, they afford much desired shelter from sun and storm; and they make it possible in a twinkling to convert a cold, comfortless coop into a semi-brooder. And this last is not the least of the advantages. Set a heater in the five inch hole, put a brooder lamp in the easily sliding box underneath, and laugh at storms. As they grow in feather and other graces the heat grows less, and finally is allowed to die out. The heater is removed, the hole neatly closed and the chicks thrive.—Howard Mitman, Northampton Co., Pa.

PROFIT IN WINTER EGGS.

In looking over the poultry page in your good paper, I saw an article titled "Do Winter Eggs Really Pay?" by a Mr. "Mac."

In the first place I have a pen of Rhode Island Red pullets, which were hatched last April. When six weeks old I fed them all they wanted and they grew fast, so by October most were laying. I picked 28 of the best in a pen by themselves and kept close watch over the results. In November this pen laid 483 eggs; December, 560; January, 588; February, 581. Now do you think it paid me? I had entire charge of the chickens. I bought two Rhode Island Red roosters for this pen to keep up the blood, and one is always penned up by himself, as two roosters in a pen are worse than none. I let the penned one out at night and the other is shut in till the next night.

As long as the sun shines, this pen of pullets get all there is of it. The place is always kept clean, and lots of litter is on the floor for them to scratch in, for they must hunt for every grain. In the morning they get wheat, in the middle of the day they get a mash of bran, middlings, ground oats and a tiny bit of cottonseed meal and in the evening whole corn, partly roasted. Meat scraps are before them all the time as well as sand and oyster shells (ground). When snow is on the ground they are kept in, but when it is nice and dry they are let out. They lay regardless of the weather. The drinking water is never left to freeze, but is changed often in the day.

The pullets are a healthy lot. Always singing and scratching, and I assure you it is a pleasure as well as very, very profitable to tend to them. Don't you agree with me?

Here is another thing for Mr. "Mac." He thinks it don't pay to have eggs in winter. He is wrong again. Chickens must be fed and tended in winter as well as summer. Now if hens should only lay when eggs are cheap and food plenty, most of which they find themselves, what about the feed which you must give them when eggs are high and when they can't find anything themselves. They must eat if they lay or not. No matter how much they lay in summer, they will never pay for what they consumed in winter in idleness, and my experience has been, if they are tended to properly in winter they will continue to lay when eggs are cheap and they can hunt their own living. When they are thru laying, then is the time to sell them. It takes work I admit, but that is what we are put in this world for. It is healthy work, as well as honest.

My husband thinks this paper the very best of all, and reads it in the evening from beginning to end, while I am only interested in the "Household" and "Poultry" page.—Mrs. Elsie Greenawalt, Mont'g Co., Pa.

PRE-COOLING EGGS FOR SHIPMENT

A few years ago the Division of Pomology of the Department of Agriculture, found that fruit could be shipped long distances if it is pre-cooled before shipment. Officials of that division have co-operated with the Bureau of Chemistry in adapting and modifying the principles of fruit pre-cooling to render them applicable to the shipment of eggs. The pre-cooling of eggs has been accomplished for the education of the shippers far from mechanical refrigeration by means of a portable refrigerating plant installed in a refrigerator car. The result is a well-insulated portable room, divided by a partition, in which a temperature at or near 32 degrees can be maintained. The space is sufficient to permit of handling eggs or poultry in 10,000-pound lots. Eggs pre-cooled in this car were shipped during May and June from Winchester, Ky., to New York. The results indicate a remarkable saving in quality as compared with eggs not pre-cooled.

NEW READERS

We offer Pennsylvania Farmer to new subscribers every week until January 1, 1914, for only 25 cents, or 5 for $1.00. Please tell your friends and get them to subscribe.

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Bees for the Farm Need little attention and pay big profits. If you are interested in them send for a sample copy of Gleanings in Bee Culture. Also a bee supply catalog.
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Thoroughbred Single Comb White Leghorns. Wykoff and Young's strains crossed. Safe delivery guaranteed of strong and healthy chicks from best trap nested winter layers. We make a specialty of winter eggs, hatching from best layers and best shaped birds only. Place your order with us for your next Winter's Layers. $10 per hundred, or 10c each for 25 or more. Write
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The great winter egg machines. For balance of season will sell eggs from this grand breed at $1.00 per 15, $5.00 per 100.
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A few settings from extra fine birds at $1.00 per 15.
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"Red Quill" Rhode Island Reds, both varieties, White Leghorns, White Cornish, Partridge Wyandottes, Indian Runner, Pekin and Rouen Ducks. Ohio State show 1913, won nine awards on 11 entries. Only high class stock, eggs to set, prices reasonable.
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S. C. Pure White Leghorns. Extra fine quality. Eggs for hatching five dollars a hundred or one dollar for fifteen; day old chicks 10 cents apiece. Send orders early to
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Fawn and White Indian Runner Ducks —Prize winning S. C. R. I. Reds, Barred Plymouth Rocks, the greatest of layers. Order your eggs now.
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EGGS for Hatching of White Indian R D (Fishel's strain.) Also Fawn and White, Harshbarger's strain white egg layers. Circular free.
J. S. WILE, Route 1, Telford, Penna.

Single Comb White Orpingtons, eggs for sale. $1.50 per 13; $10.00 per 100. Fine pure white birds. The Alba strain. Address
ROY CRANDALL, Albion, N. Y.

Barred Rocks, Bred in the very best blood lines. Eggs, $1 per 15 or $4.00 per 100.
CHAS. T. DOWNING, Rt. 2, West Chester, Pa.

DON'T BUY CHICKS—BUY EGGS FROM US CHEAPER. S. C. White Leghorns or Barred Rocks. None better $1 for 15; $3.50 per 100.
PARADISE POULTRY FARM, Paradise, Pa.

INDIAN RUNNER DUCKS, S. C. R. I. Reds "The mortgage lifters." Free booklet.
H. O. CAMP, Star Route I-F, Salem, Ohio.

Indian Runner Duck Eggs. Prices Reasonable. Write.
GEORGE SEITZ, BEAVER, OHIO.

Buff Orpington Eggs, 15, $1.00; 50, $3.00; 100, $5.00. White Holland Turkey Eggs, 9, $2.50; 15, $4.50. W. A. LOTHERS, Peru Lack, Pa.

Registered DUROCS, all ages. Rhode Island Red Eggs, 17 for $1.00 or $4.00 per 100.
W. F. HARSHMAN, Lewistown, Maryland.

EGGS FOR HATCHING from S. C. Buff Leghorn and Harshbarger strain of fawn and white Indian Runner Ducks. C. C. Rodway, R. D. 39, Hartly, Del.

Buy eggs from world's best laying strains, Fishel W. R., $1 per 15; 100 $5; Blaker's W. H. Turkeys $3 for 10; C. E. Cassel, R. D. 3, Middletown, Pa.

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White Pekin Duck Eggs for hatching, 8 cents each, $7.00 per 100.
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Grange

This department is conducted by R. P. Kester, Lecturer of Pennsylvania State Grange. Notes, queries, comments and news of grange work are invited from readers. Obituary notes and news of purely local interest can not be used. Address all communications for this department to R. P. Kester, Grampian, Pa.

EDITOR'S NOTES AND COMMENTS

New members, new granges, new Pomonas, new halls are among the encouraging news concerning grange activities. If ever the conservative and indifferent farmers can be made to realize the necessity for organization, it is now.

Whether the proposed new tariff law makes one whit of difference in dollars and cents to the farmer is not the question. It is the seeming indifference of politicians to the welfare of agriculture, and their eagerness to pose as reducers of the high cost of living by striking off all protection on the least protected, the least prosperous and yet the biggest industry in the country, and proposing to leave an average of 50 per cent of former rates on the manufacturers' products. It's the discrimination that hurts.

The following statements are taken from the April Crop Reporter, United States Department of Agriculture:

"On April 1st, 1913, prices on staple crops averaged 25.9 percent lower than on the same date last year."

Condition of winter wheat, 11 percent better than in 1912."

The department sent out 3,000 letters to country banks asking what rate of interest is paid by farmers. The answers show that the rate varies from 5 to 12 percent, the average for the United States being 7.75 percent.

It is estimated that it costs 77.3 percent of the selling price to raise a horse to the age of three years in the North Atlantic States and 66.7 percent in South Central States.

Governor Tener, on April 22, signed the aigrette bill, which prohibits the sale of aigrettes and the shipment of such feathers into or out of the state after July 1, 1914. The bill prohibits the killing or having in possession any wild bird other than game birds, or any part of its plumage or skin. While this bill is now a law in Pennsylvania, let every farmer take up the fight in Congress by writing to the chairman of the ways and means committee, also to their Congressman, to vote for the bill which will provide a like national law. The following is from a circular sent out by the New York Zoological Society:

"What to Do.—The present is a remarkably auspicious moment for striking a blow against the slaughter of wild birds for millinery purposes. A new tariff bill is rapidly being framed by the House committee on ways and means, for early presentation at the extra session of Congress. If the ways and means committee, and the House of Representatives can be sufficiently encouraged to take the decisive step that has been proposed by the New York Zoological Society and the National Association of Audubon Societies, the result will be a victory that will completely reform our attitude toward the birds of the world. Think what it would mean to stop, at one stroke, all slaughter of "plumage" birds for the hats of American women, and at the same time wash our hands clean of the odium of this traffic! This appeal is addressed particularly to the women of America, because we believe that if any considerable bodies of them can be reached, and fully informed of the situation, the result will be an overwhelming demand for the entire prohibition of the importation of plumage of wild birds for millinery purposes. The need of the hour is that Congress should be informed of the wishes of the American people regarding this matter."

PUBLICITY OF GRANGE NEWS

Many granges might increase their usefulness and extend their work by giving greater publicity to their activities. The successful business man owes his success to persistent advertising. The printing press is the lever that moves the world. Many granges, doing good work, are known only to the members of that grange because no publicity is given thru the newspapers or otherwise, hence the greatest usefulness of the grange is not realized.

The following letter and accompanying newspaper clipping, giving a report of the grange activities in Susquehanna County, show how they use a publicity agent in that live county. Only extracts are given:

Dear Brother Kester.—I enclose a sample of the publicity work carried on by Susquehanna Pomona Grange No. 7. The enclosed clipping is from one of the county papers, of which there are six; five of them receive items each week. Sometimes we have more items than the sample enclosed, and sometimes only one or two. The editors of two county papers say that some people have subscribed for their papers chiefly for the grange items.—Fraternally yours, J. S. C., Publicity Agent, Pomona No. 7.

The following notes appeared in the Montrose Independent Republican:

Cambrian.—Regular meeting was held in the evening. Among other items of business, four appeals were read, and one dollar was donated to each. Irving Davis and Harry Tripp were given the third and fourth degrees. After grange closed, all partook of refreshments. Come to our next meeting and enjoy the program prepared by the lecturer and hear of the debate in the near future.

Utility.—After official business the following program was given: Vocal solo, "Daddy," Sister Theda Stevens; reading, "Developing the Community Spirit," Sister Eliza Cogswell. Next time Brother and Sister E. C. Neibell will have charge of the literary program. Our grange has just bought a quantity of flour at a substantial discount from former prices.

Harford.—After conferring the third degree grange adjourned for dinner. After dinner the third and fourth degrees were conferred on Wm. Warren and Emory Titus. Sister Flora Forsyth was elected overseer for the remainder of the year. We voted to help send a member of the order to Europe to study the agricultural credit system used there. Lecturer's hour was taken up with the question: "Which is the more important to a farmer—fertile soil or good business methods?" Grange decided good methods will succeed on almost any soil. Our question next time will be, "Prophesy Farming in 1940. How Will It Be Done?"

Shiloh.—The name, number, etc., of our grange have been nicely painted on a board eight feet long and fastened to the hall for the information of strangers and travelers. Refined oil is now kept in a tank at the grange hall for sale to the members. The grange has purchased lumber to fix up the picnic grounds one-half mile from the town.

Heart Lake.—A large amount of business being done; all enjoyed a good time. Grange held a very successful social at the hall, March 12. The grange sisters met at Sister Eunice Griffing's, March 29th, to make up material for first and second degrees. All report a fine time. The sisters will meet April 5th to make curtains for our hall at Sister Griffing's. Our literary program for next meeting will consist of singing, a talk on fertilizers, select reading and critic's report.

Gibson.—About 40 present. An Easter dinner was served. During the lecturer's hour some of the members gave a short talk on potatoes, how to prepare the seed and ground; also their experience in raising large crops. Grange held a maple sugar social on Monday evening, March 17th. Quite a number present.

Lawsville.—At the meeting, March 21, 50 members were present. Lecturer's hour was occupied by a debate, Resolved, that woman should have the right of suffrage by an amendment to the Constitution. C. W. Bailey took the affirmative, the negative being taken by Sisters Lulu Lindsley, Mary Downs and Clare Knapp. Judges, Rockwell, Southworth and Allard. Decision in favor of negative. After the debate a lunch was served and a jolly social hour enjoyed.

McSPARRAN'S GRANGE NOTES

The Morgan Principle

The death of J. Pierpont Morgan takes away one of the most aggressive and dominant persons in our financial life. His connection with so many of our great industrial consolidations and the influence his firm exerted in the banking world makes his passing away a matter of concern not only to his personal friends and relatives but to the whole people of the United States, and to a lesser degree, the people of the whole civilized world.

Upon his coffin has been laid the tribute of the press of the country extolling his power and standing in our large business affairs. The good he has done has been heralded and the evil has been covered with the veil of human sympathy. And yet this is hardly a just way to look at the situation. A man who has lived his life in the midst of great corporate undertakings must be judged by the principles that underlie those undertakings as far as his influence has moulded them. A man may be personally a loving husband, a good father and a kindly neighbor, and yet, as the head of some business in which thousands of people were concerned be a veritable monster, in that the corporation would grind down labor and strangle competition without apparently a thought of mercy or a feeling of sympathy. Therefore the rating that a man like Mr. Morgan must expect from those who survive him and survey his life as personal strangers will not have so much to do with his character and standing as an individual. It will enquire as to what his record was in the great institutions of business where he was known by a thousand compared to one who knew him in his private life. And when 50 years have passed, his contact with the general welfare will either place a crown of honor upon his memory, or repulse a recollection of him with a frown of disapproval.

What is the relation to the people of the United States by which Mr. Morgan is most widely known? It is that he was the great and central promoter of private monopoly. Not that he was intentionally bad. He no doubt believed that the time of competition in business had passed. But all do not agree with him as to that policy, and as the years pass, unless it should prove true that the day of competition is over, he will be looked upon as the great arch enemy to our best industrial and financial development. The following partial list of his consolidations will show how largely he has hastened the growth of what we know as special interest control, and tens of thousands of families are held in the iron grip of these monopolies largely as a result of Mr. Morgan's superb ability to organize these grim giants of business operation. Mr. Morgan's great business achievements are as follows:

Arranged the lease of the Albany and Susquehanna to the Delaware and Hudson, 1870; his first railroad deal. Entered the firm of Drexel, Morgan & Co., and began business relations with William H. Vanderbilt. First connected with Government finances in 1876. Played a prominent part in "gentlemen's agreements" between railroad presidents, 1884-89. Made famous West Shore deal, 1885. Conducted numerous railroad organizations 1886-1900. Reorganized the Northern Pacific. Came to relief of United States Treasury, 1895. Negotiated Mexican loan, first large foreign loan ever placed in United States, 1899. Handled $25,000,000 of the British war loan, 1900. Formed United States Steel Corporation, 1901, with a capitalization of $1,154,000,000. Formed Northern Securities Company, 1901. Organized International Mercantile Marine Company, 1902. Took command of relief forces in panic, 1907. He dominated many banks besides his own; was a powerful director in 21 railroads, large and small; was a director of the Western Union Telegraph Company, the AEtna Fire Insurance Company, the Pullman Palace Car Company, the General Electric Company and many other big corporations.

So, by those of us who do not believe in this strong centralization of business, Mr. Morgan will be remembered, not as an individual, for we knew him as a principle; not for his love of art, altho he was a connoisseur; not for his philanthropy, for his modesty prevented its being advertised, but for the fact that he placed the dollar above the man, broke down individuality in business, corrupted politics, oppressed labor, robbed the consumer and bound our people in industrial slavery.—John A. McSparran.

GENERAL GRANGE NOTES

The Connecticut State Grange, thru its legislative committee, is working against the enactment of an employers' liability and workmen's compensation law unless it shall exempt the farmer. They are also working to have the present personal tax of $2 retained. A Patrons' Exchange, for purchasing farm supplies, is a feature of the work in that state. A single grange has made purchases to the amount of $18,000 the past year. The present membership of the grange in the state is something over 15,000.

A worth-while undertaking on the part of the Massachusetts State Grange was the establishment of an Educational Aid Fund whereby worthy young people who are members of the grange can be assisted financially in obtaining an education. The state grange appropriated $1,500, which became available when the subordinate and Pomona granges had raised a like amount. The treasurer of the fund reported at the close of last year that nearly $1,000 had then been secured. The fund is administered by a board of five trustees.—J. W. Darrow.

PENNSYLVANIA FARMER
AGRICULTURE THE KEYSTONE OF NATIONAL PROSPERITY
ESTABLISHED 1880 PUBLISHED WEEKLY

Established 1880. Published Every Saturday.
Entered as second-class matter at the postoffice at Philadelphia, Penna

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Philadelphia, Pa., May 10, 1913.

CARE IN PURCHASING

Too often do we hear people tell of having been hoodwinked in a purchase—that the article was not as represented. Sometimes perhaps the dissatisfaction is due to a misunderstanding between the buyer and seller; occasionally the purchaser has been careless and is really to blame. But it is safe to assume that in the great majority of cases the seller has taken advantage of his superior knowledge of the actual condition of the article in question to grossly exaggerate its quality or performance. This is, in part, a survival of the old trading days, when it was pretty generally understood that the buyer should beware. It is also to an extent simply following an instinct that is more or less prevalent in all of us—to gain an advantage.

If you will stop to recall such incidents in your own life you will undoubtedly remember that the purchases you made were practically all confined to a product which you were not familiar with or had never heard of. You simply "took a chance."

There is one pretty certain way to avoid being imposed upon—buy goods that are known for their intrinsic merit and dependable quality. Buy from those who have demonstrated their worthiness in their transactions with you or your neighbors, and shun every dealer or manufacturer who has ever taken a mean advantage. To be absolutely safe, buy advertised goods and remember that no manufacturer can afford to spend money to establish a trade for his product unless he consistently offers an invariable quality that will give his goods a reputation such as will increase the volume of his business. Otherwise the advertising would not prove profitable to him.

Read and absorb the advertisements you see in the Pennsylvania Farmer. They are absolutely dependable and they will help you to buy right.

OHIO'S FLOOD LOSS

In the daily reports of property loss and increased suffering which were sent abroad during the recent flood in Ohio, little or nothing was said of the damage to the agricultural interests of the state. Great city losses were sustained, but the cities are already rebuilding with the assistance of money made available by the flood damage. Public subscriptions were forwarded to care for immediate needs, and financial interests knowing the security of their investments, are now gladly supplying money for the reconstruction and repair of most of this damage. The advertising which the affected cities received will not be without its value to the various business interests of these cities during the next few years. No one questions the seriousness or extent of the loss to these cities, but it is a loss which is comparatively easily restored. But how about the agricultural interests? The Ohio Department of Agriculture, from the reports of 1,630 correspondents representing 1,000 townships, estimates that the farmers of the state have suffered a loss approximating $16,000,000 from the winds and floods. This estimate is based largely upon damage to standing crop of wheat and prospects of spring-grown crops; also damage from driftwood and debris, which had to be cleared away, injury to buildings, etc. But even greater than this must be the losses due to erosion and washing away of the surface soil and the loss of organic matter in the soil, as well as the indirect losses due to interference with crop rotations, established plans, etc. Yet these farmers are showing the characteristic optimism of all farmers. They received no help from outside sources, and they asked none. But each, a master of his own domain, is starting in resolutely to repair the damage so far as possible, and is expecting to make later crops repay him for present loss. The same Department report which told of the $16,000,000 damage says that in spite of loss to wheat, the present acreage is in excess of the acreage harvested in 1912, and with favorable growing conditions the crop should exceed that of last year by several million bushels. Damage to oats, rye and corn was largely in delay of planting season, and again favorable weather conditions will produce crops to remedy the loss. This is the spirit that wins, and with favorable growing conditions, these farmers will soon be producing full crops again and again contributing to the rebuilding of their cities whose losses have been so widely advertised. It is but another demonstration of the location of the real backbone of state as well as national prosperity.

RURAL PARCEL POST

We have received a number of letters taking up the two sides of the controversy which was started with our statement concerning increased use of parcel post on rural routes. We give the two following as representing the carriers' side of the matter

Editor Pennsylvania Farmer:—Replying to your article in the April 12th issue of the Pennsylvania Farmer, would say that our protest was not, as you are striving to make your readers believe, against carrying more mail, but against the statement that he could carry 500 pounds additional parcel post matter without extra expense to us. We did not intend to enter upon a discussion with those who do not appreciate our needs. However, we do want to say that we think that you are begging the question, as stated above, and we hold and can successfully demonstrate to you that you are wrong. The faithfulness and efficiency of the rural carriers has made parcel post possible. We have handled all the mail up to the present time and expect to be on the job in the future as well.—John H. Swank, R. L. C. No. 6.

This letter has the endorsement of the Lancaster County Rural Letter Carriers' Association.

Editor Pennsylvania Farmer:—On behalf of the four rural letter carriers of the Stewartstown, Pa., postoffice I wish to say that we think it is a pity that so good a paper as the Pennsylvania Farmer should take the wrong attitude with reference to the 42,200 rural carriers of the United States. The legend under the illustration of the rural mail wagon in your issue of March 28 was misleading in the extreme. Ninety percent of your readers would get the impression that the rural carriers are receiving a salary of $1,100 and that Uncle Sam maintained their equipment, which of course is not true. If you wish to [illegible] that the government maintains the outfits of the rural carriers, you ought also, in justice to the faithful carriers, say that at most they receive an average salary of only $700, and a proportionate decrease on routes of less than 24 miles, as it costs at least $400 to maintain an equipment on a standard route. We can prove this with figures.

The objectionable part of the statement was not that 500 pounds could be added, but the assertion that it could be done "with practically no cost added." It certainly ought to be plain that when a horse is worn out and useless on an average of once in every two years, as is now the case, with 50 pounds or less per day, he certainly would become useless in a much shorter time if this weight were multiplied by ten. The same thing is true of harness and vehicles. The National Rural Letter Carriers' Association, many of the state rural carriers' associations, and hundreds of county associations of rural carriers passed resolutions and transmitted them to Congress urging the passage of the parcel post law. The parcel post law was passed largely on account of the influence of the rural carriers, coupled with the influence of the grange.

You intimate that if the carriers are not satisfied with their present salary, which I have stated was only about $700 or less per year, they can resign and that others just as well qualified can be obtained. This argument can be applied to all lines of employment, but it is not conducive to good service to act in accordance with such reasoning. Loyalty and efficiency can only be maintained by a generous financial policy, and assurance that there is chance for promotion and fixed tenure in office for those who are capable and loyal. This applies to government employment as well as private. The truth of the matter is that most of the rural letter carriers accepted their positions when the total yearly salary was $600 or less, and many of them, unless they had another source of income, have not been able to make both ends meet until just recently, and they feel that they ought to remain in the service which they built up to its present high state of efficiency by their self-denial and loyalty to duty, and enjoy the rewards which they hope will come thru these efforts. Therefore, they naturally resent a widely circulated statement that the weight of their mail can be increased ten-fold with "practically no added expense."

In regard to hours of employment, most carriers would much prefer to work 10 or more hours per day, as they know only too well the faster they must drive and the heavier the load the sooner they will be obliged to purchase new outfits. They are compelled to limit their hours of service in order to catch mail trains. In addition to the actual time on the route, they must also spend two hours each day to care for their equipment, and one-half hour or more at the postoffice to route mail. Thanking you kindly for giving this publicity in your valued paper, I am,

Yours very truly,
WM. H. SWEITZER.

These, as well as other letters received, involve the fairness of salary and details in carriers' service which we had no intention of questioning. Let us return to the original statement, which was that the average load of rural carrier outfits might be increased from something less than 50 pounds per day, as at present, to 500 pounds per day, with practically no added cost. We had no intention of minimizing the claims of carriers for increased salaries in return for increased service; nor do we wish to permit any misrepresentation in the matter to remain. Our purpose was to point out, in a brief statement, the foundation which the government already maintains for the broad general use of the parcel post system, and how, with the reduction of rates to the basis of actual transportation, that service might come into general use at comparatively small expense. Our error, as our carrier friends have pointed out, was in the lack of a definite statement of the added cost. We shall attempt to secure data from reliable sources bearing on the cost of increased service, and if such data are available, we will be glad to give them to our readers at a later date. We believe that such figures will show that the increased cost will be very slight as compared with value of service rendered, and that the government will find an actual economy in adjusting rates to utilize full capacity of present equipment and eventually increase equipment to care for the full service which equitable rates will bring out. With such service the carriers will be deserving of increased salaries, and will require improved equipment. There can be no doubt that they will receive both.

FARM RISKS

Every season, in some section, we hear a farmer complain of the great risks that are the farmer's lot, and the great amount of "hard luck" which seems a necessary part of the business of farming. Frosts destroy fruit buds; drouths wipe away the prospects of corn, wheat and hay crops; hail storms cut the corn and ruin the apples, and numerous other contingencies are always at hand to remind the farmer that he is more or less at the mercies of the weather. These risks are very real, and when a farmer has suffered by them he says he has had "hard luck." But it is because these risks are so apparent that the average man considers them an important factor in his business. The business man in the city must take equal risks, perhaps in other forms. A few years ago women demanded cloth and canvas shoes; they were the style, and the shoe manufacturer changed a great part of his equipment and machinery so that he could meet the demand. The next year the cloth shoe went out of style and the women again demanded whole leather shoes, and, as a result, the shoe manufacturer was left with a great amount of useless machinery and was again obliged to change his mill. Fads and fancies make the consumption of most commodities, especially wearing apparel, very uncertain and present risks which every manufacturer must take. They are business risks, and are to be reckoned with in any line of work, whether it be industrial, professional or scientific. Moreover they are, in a good many cases, just as great as the more apparent weather uncertainties which the farmer must count as his business risks. The business man spends much time, money and energy to safeguard himself as much as possible against his risks, while the farmer too often regards them as a visitation and resigns himself to his fate. The last few weeks have illustrated this point in orchard work. Peach buds have been subjected to frosts, and some men have lost their crop, while others have suffered little or no loss. Those who have lost have taken a chance, while those who have not have safeguarded themselves against their risks by orchard heaters. In the same way, those who complain most against drouth are those who fail to conserve their moisture, while the farmer who keeps his cultivator going from morning until night harvests good crops in spite of drouths. In other words, the business farmer who runs his farm along business lines reduces his risks to a minimum, while the man who is run by his farm is the one who is annually embarrassed by each unfavorable change of the weather.

THE JAPANESE SITUATION

There are many interesting phases brought out in the recent diplomatic tangle with Japan which can be taken to heart by every farmer in the country. The objection to Japanese land ownership exists chiefly in the rural sections and most of the objection originated with American farmers. While there are diplomatic and political sides to the question, which make it one requiring tact and judgment, and many reasons are put forth to support the claim that the Japanese are undesirable as land owners, the objection at the base of the whole agitation relates directly to American agriculture. It is undoubtedly true that no good reason exists for allowing aliens to own real property when they are ineligible to citizenship, and again there is a certain genuine danger in the long agitated "yellow peril." But there is yet another good reason why the farmers of California revolt against competition with the Japanese, and it is because they can not successfully meet the competition. The Japanese have the foreign characteristic of doing the work in a most thoro manner, giving great attention to details and having unlimited energy. Their farms are small and mostly used for the production of horticultural crops. Strawberries are grown in enormous quantities, and grapes, oranges and all fruits are cultivated. The vineyard orchards and gardens are worked with the greatest intensity, every foot of land being used for the production of something, and soil fertility is looked after in the most painstaking and intelligent manner. Aside from this, the Japanese live simply and on wages which would starve an American laborer. This combination of few living necessities and the ability to produce crops of high quality makes a hopeless situation for the Americans competing with such farmers, and lends justice to the claim of undesirable competition. However, the example set by these thrifty people should be a lesson to set American farmers thinking. When a man takes a farm adjoining us and raises twice as much as we can with no greater advantages, it is time we either learned his methods or devised some of our own just as good.

PENNSYLVANIA LEGISLATIVE NEWS

Important Legislation Still Held Up.—Notwithstanding the zeal and energy shown in the last 10 days by the legislature, the senate having, on one occasion, held two sessions a day, much of the important legislation remains unenacted. This is due primarily to the failure of men influential in state affairs to get together on features early enough to work out satisfactory programs. The result has been that the members of the house, especially, have had time to rush thru a mass of bills which in many cases were ill considered, and in others in shape which was not satisfactory to the senators. The 100 days commonly allotted to a session has gone by, and not one of the measures so widely discussed before the general assembly met has become a law. The house has passed most of them, but the fact that there was no general agreement upon them such as has been worked out, or nearly effected, on appropriation bills, is now very apparent. The legislative committees of the various political, labor and other organizations having a proper interest in legislation is making its desires in regard to the workmen's compensation and public service bills known very plainly. The conditions indicate little chance of adjournment in May.

The Demonstration Bills.—The bills providing for extension of the demonstration work among farmers have suffered from the policy of the committee in not dealing with its hospitals first. There are several bills in committee of the utmost value, but where they are going to end no one can tell. The bill establishing the offices of 10 expert counsellors on farm work is about to become a law. This will provide for about a score of men to go among farmers and advise on soil and other problems. In the two appropriation committees are bills appropriating $100,000 to State College for extension of its demonstration and other work in the field, the idea being to place the state in better position to obtain a share of the money which Congress may vote for agricultural extension. Another bill held up allows counties to appropriate as high as $1,500 a year to agricultural work. Members from rural counties have been making efforts to obtain action on these bills, but their value to the state at large unfortunately does not appear to be realized, and the men who are urging them find the minds of colleagues occupied with legislation which ought to have been out of the [illegible] long ago.

State Fair Delayed.—Altho the Senate promptly passed the bill for establishment of a state fair, the house appropriation committee has allowed itself to become entangled in the fight waged against the measure by the men interested in small fairs, who have a totally wrong idea of the effect. The house agricultural committee promptly reported in favor of the bill, but the appropriation committee has held it up for weeks. At first the opposition was that the half million dollars asked for buying land, erecting buildings, and the expenses of the first fair was too much, but lately opponents of the measure have come out in the open. They are fighting the measure solely on selfish grounds, unmindful of the great successes attending similar fairs in Ohio, New York, Minnesota, Illinois and other states. This subject has been mooted for 10 years, and there really exists little reason for failure to act on the bill one way or the other.

No Rebates on Taxes.—The house has killed beyond recall the bill which would have permitted the school districts of the state to allow rebates on taxes paid up to October. This was one of the chief objections to the code, but the vote in defeat of the bill and in downing the motion to reconsider shows the majority of the house favorable to allowing the code to be thoroly tried out before making vital changes.

Agricultural Education.—The approval of the Showalter vocational educational bill makes possible courses in agriculture in all schools with state aid to extent of two-thirds of the cost, provided the legislature makes an adequate appropriation. The general plan of the bill is simple. All districts need to do is to outline courses and submit them to the state board of education for approval. Efforts to have the appropriation bill for this object passed without delay are being made.

Cold Storage Bill Fight.—The final fight against the bill to regulate cold storage is being made and the governor has been asked to veto the bill. Briefly, this bill regulates the whole cold storage business and interests every farmer. Every package put into storage must bear the date of entry and date of withdrawals as well as the words "Wholesome Storage Food" on a placard. The state is to license all such places, and the periods in which foods may be stored are as follows: Beef carcasses or any parts, 4 months; pork, sheep and lamb, 6 months; veal, 3 months; dressed fowl, 5 months; dressed fowl, undrawn, 8 months; butter, 9 months; egg, 8 months, and fish, 9 months. The penalties are drastic. First violations is punishable by a fine of not over $500, and for each subsequent offence fine of not over $1,000, and persons violating the law or officers of a corporation violating the law may in addition be sent to prison for from 30 to 90 days, at the discretion of the court for second or subsequent offences.

Township Roads.—The bill to establish the state township road system under state direction is still in committee, but committees have sent to the house the bill to appropriate $1,000,000 for payment of bonus to townships which abolished the work tax. Originally $2,500,000 was asked, but the sum was cut. The bill to levy a special one mill tax on all property subject to state taxation except mortgages and judgments on real estate, which has had a checkered career, is also reported out.

Oleo Bill Dead.—The action of the house in refusing to reconsider the bill to permit use of coloring matter in oleo kills the bill for this session in the house. The Endsley senate bill establishing a color for oleo, appears to be likely to pass.

New Deer Season.—The governor has signed the bill to make the deer season from November 10 to November 25. The former season was November 15 to November 30. This is the third change made in less than 10 years in the deer season.

NEW JERSEY FARM NEWS

Increase in Milk Supply.—Market receipts are slightly in excess of the daily demand, but this is due more to unfavorable weather for promoting sales than to increased output. During the past month 1,493,990 cans of milk and 66,106 cans of cream and unsweetened condensed were produced, the whole equal to 1,825,520 of plain milk. This is an increase of 113,318 cans, as compared with the corresponding period of 1912. The total increase (composed of 68,313 cans of milk and 9,001 of cream) averages 3,655 daily.

Damage from Weather.—The prospective fruit crop has been seriously injured by the recent, wet, cold weather. Early strawberries, Japan plums and nearly all varieties of peaches were practically all destroyed. Keiffer pears were nearly all blasted by the prolonged rainy and cloudy period. Apple buds had not developed sufficiently to sustain injury, and at present indications seem favorable for a good crop of fruit, as the trees have been a mass of bloom. The weather has also been responsible for rotting large quantities of newly-planted seed potatoes, particularly on low ground, and many fields have been either replanted or plowed up preparatory to planting to corn.

Farmers Warned.—The Monmouth County Farmers' Exchange has been sending circulars to the members warning them not to plant any seed potatoes that, when cut, show black streaks, spots or other discoloring, to throw out any that show any indication of disease, and to treat all seed potatoes with formalin (a pint in 30 gallons of water) for two hours.

What the Farmers Need.—Secretary Franklin Dye, of the State Board of Agriculture—himself a practical farmer—declares that the farmers of this state have demonstration methods galore—not counting the new Kays act. Many of the lessons thus taught have been put to good use. But the fact remains that the farmers can't utilize them all, largely because they can't get money on advantageous terms to improve their soil, their buildings, their stock, their implements and their crops. It is not a mere question of schooling; it is a matter of business, of finance, of currency. It's all very well tell farmers how to do things, but it's better to enable them by a farm credit or some other system, to do what they are taught.

School money distributed.—In accordance with the aforesaid new law, the distribution of the state school funds has already taken place. These funds amounted to $2,756,150.03. This new law was passed to stop the borrowing of moneys by the counties for school purposes and paying interest on such borrowings.

Another Agricultural High School.—Supt. A. B. Vossler, of the North Plainfield schools, is planning to include in the high school curriculum dairy and poultry husbandry and vegetable gardening. This course will be introduced at the earnest solicitation of many of the parents of the pupils. The work will be planned somewhat after the agricultural courses as taught at the Freehold high school.

New Roads Approved.—The state highway commission has approved a preliminary map of the roads designated by the commission to comprise the new system of state highways. Over 1,500 miles of roads are comprised in this system.

New Motor Vehicle Law.—The new motor vehicle law prohibits any motor vehicle weighing in excess of 25,000 pounds, including load, from being operated upon any highway or over any bridge without first obtaining a permit from proper road authorities; prohibits the operation of any vehicle which has flange or ribs or other damaging objects attached to wheels. Loads are limited to 800 pounds upon one inch tires. The speed of traction engine or motor vehicle carrying over 8,000 pounds is limited to 12 miles an hour, except where tires are of other material than metal, in which case the speed may be not exceeding 10 miles per hour.

Free Armory Bill Failed.—Farmers thruout New Jersey are greatly disappointed because the legislators failed to pass the bill to give free use of armories for holding state organization gatherings. Because of the price asked for the use of the Trenton Armory it is not available for such meetings.

South Jersey Station.—South Jersey farmers are aroused over the refusal of the legislature to provide an appropriation of $30,000 for the proposed branch agricultural experiment station in that section. They have signified their intention of keeping up the fight.

Putting an End to Short Measures.—That dealers have resorted to many fraudulent methods in measuring or weighing goods, giving less in quantity than the standard sizes call for, is shown in the first annual report of the department of weights and measures, submitted to the state by Superintendent William L. Waldron. The report also shows that the department has accomplished much in exposing the frauds and protecting the public in this respect. Concerning those who give short weights and measures, it is a matter of gratification to know that farmers have been less to blame than any other class.—D. T. Hendrickson.

NEW YORK LETTER

Grape Vine Beetle.—It was discovered that the grape vine flea beetle had made its appearance in a vineyard in the western part of the state and the owner immediately put six girls on the job, and in four hours they destroyed 4,378 beetles. It is eight years or more, it is said, since these beetles have appeared in that locality. They are fatal to the coming crop if not destroyed.

Meeting of Breeders.—The Holstein Friesian Association of America will meet in Syracuse, N. Y., in June and a large attendance is being arranged for. This association has 6,000 members and a treasury surplus of $150,000. The question of erecting a building, either in Syracuse or New York, for permanent headquarters of the society and for rental purposes, will probably come up for discussion. At the forthcoming meeting or on the evening prior to it, a banquet will be spread for 500 persons. It is said that $1,500,000 worth of Holstein cattle have been sold in Syracuse and vicinity the past winter.

Milk Bills Defeated.—Two bills which have been before the New York legislature for some time were acted upon this week and killed. One provided for a state wide inspection of dairy farms and methods of handling milk, and the other required the medical supervision of all persons engaged in the milk industry. It was argued that the present laws and the regulations of the agricultural department are sufficient to meet all necessary demands for inspection if sufficient funds were provided for the purpose.

Milk Stations Must Be Licensed.—Governor Sulzer, of New York, has signed the bill which requires all persons who buy milk for shipment or to make into butter or cheese, to take out a license from the department of agriculture. The license fee is only $10 per year, but the important thing is to know who are responsible for the quality of the milk which is sold to the consumer, and it is proposed by the bill to weed out all irresponsible parties who may have been doing business in this line, and to see that only those who are financially responsible and in other ways qualified to carry on the business, are licensed to do so.

State Grange Committee.—The New York state grange legislative committee has watched legislation for and against the farmers' interests very carefully this winter and spring and their efforts in the farmers' behalf have been very successful. The legislation which they have opposed has been about the most important feature to the farmer, and they have prevented certain bills from becoming laws, or have been influential to that end. Such bills were those placing a tonnage tax on fertilizers and feed stuffs, a so-called sanitary milk bill, which sought to erect a new bureau in the department of agriculture with many offices, and one giving the State Board of Health power to supervise all persons engaged in the milk business, and still another to give the Department of Agriculture the right to enter upon and control all dairy farms.

Freight Car Legislation.—There is a bill before the legislature to compel railroad companies to move freight cars to their destination in the state, or to connecting lines, within 24 hours for each 50 miles of travel, from receipt of notice from the shipper.

Cows Are High.—Cows are expensive stock to buy this spring in some of the western counties. In Chautauqua county they are bringing as high as $75 at auction sales. Native milk cows bring $50 to $60 each and grade Holsteins up to $75. In Monroe county new milk cows are worth $60 to $80, and some extra good milkers have sold for $100.

Strawberries.—One of the most profitable things about many farms is the strawberry bed. Bulletin 164 of the Perdue Experiment Station, Lafayette, Ind., is an excellent treatise on strawberry culture, taking up the subjects of varieties, planting, cultivation, fertilizers and marketing. In Indiana they get an average of 1,156 quarts of berries per acre, and this bulletin tells how they do it.

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Loads out of Swath or Windrow without adjustment

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Any one who can drive a team can handle it; for it works on an entirely new principle that does away with trouble making cams, drums, chains, sprockets, rope webs, and gear wheels.

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No clogging—the yielding deck effectually prevents clogging. Heavy or light hay, swath or windrow can be handled without adjustment of any kind.

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Side Delivery Rake and Tedder

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He will gladly show you any of the famous Flying Dutchman Line, which includes Moline Plows, Mandt Wagons, Low Down Manure Spreaders, Monitor Double Disc Drills, Henney Buggies, McDonald Pitless Scales, and Adriance Harvesting Machinery—each the best of their kind.

Descriptive Booklet of any of the above will be sent you postpaid if you

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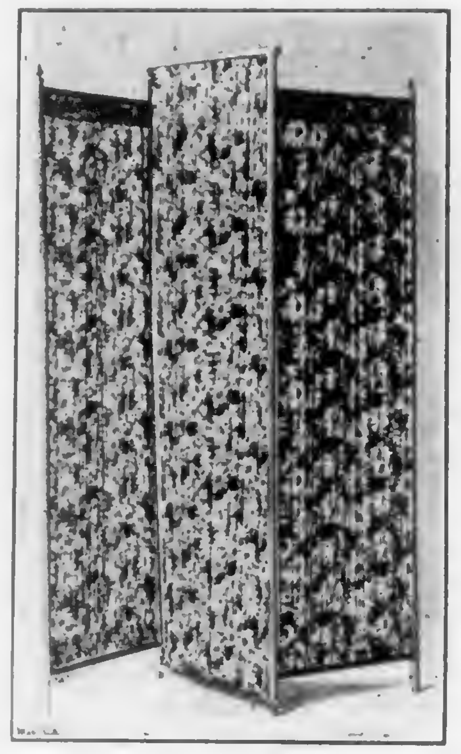
Household

PRESERVING THE FIRST FRUITS

By Mary Mason Wright

Strawberries and cherries are at their best for preserving in June, altho their season extends over a longer period than this. Raspberries and currants are at their best for preserving in July; also gooseberries and blackberries.

The strawberry is one of the most popular and healthful of our early fruits. It is best in its natural state, since heat deprives it of some of its flavor and rich coloring. Yet it makes delicious preserves, jellies and jams. Strawberries are more difficult to keep than most fruits, and for this reason requires more sugar for preserving. In canning, allow from one-fourth to one-half pound of sugar to each pound of fruit, and for jelly, one pound of sugar for each pint of juice.



A SIMPLE SCREEN MAY BE MADE USEFUL IN MANY WAYS.

There are several excellent methods of canning strawberries so that they will largely retain their shape and color. We prefer the following method, not being so tedious as some others and producing good results. Choose firm, ripe berries, hull and wash by placing in a colander and let the water pass over them from the spiggot or faucet. Place the fruit and sugar layer about in a preserving kettle, using the right proportions. In the morning, pour off the melted sugar and the juice which the sugar has extracted from the fruit, and place in a preserving kettle over the fire. Boil down a little, then add the berries while still boiling, and allow to remain until heated thru; then remove carefully with a wire strainer and place in jars.

After the berries are in, fill the jars to overflowing with the juice. Screw on the hot lids, being sure they are airtight. This can be tested by turning the jars up on their lids, and if they do not leak they are all right. Wipe off the jars and slip them into paper bags or paper to exclude the light, and store away in a cool, dark place. A little pink fruit coloring can be added when canning strawberries if the natural color is not retained as you would like. Before starting to can these berries be sure your jars and lids are perfectly clean: use new rubbers, and see that they fit snugly.

Another method, which is somewhat more tedious, is to place the fruit and sugar in the jars, then set them in a boiler of cold water and heat gradually until the berries are heated thru and the sugar melted. Have a little extra juice on the range to fill the jars up with if necessary; then seal. Strawberries do not jelly well when used by themselves; but red currant juice can be added in proportions of one-third currant juice to two-thirds strawberry juice. The currant juice will not destroy the distinctive flavor of the strawberry. A little gooseberry juice will give strawberry jelly a pleasant flavor. Use the juice of unripe gooseberries, and do not use more than one third of it.

Strawberries, sun-preserved, is the best way to retain the appearance and flavor of the natural fruit, but requires some time. The berries can either be cooked entirely in the sun, or else partly cooked over the fire and completed in the sun. For this purpose use only the most perfect berries, remove stems, and wash the fruit by placing it in a colander and dipping it in and out of water, or hold under running water. In sun-preserves, use two-thirds of a pound of sugar to each pound of fruit. Spread the berries on platters and cover with sugar, and allow to stand over night; then in the morning place the platters in the oven a few minutes to melt the sugar and extract the juice not brought out by the sugar. Then place the platters in the sun—in the hottest place you can find; they should be placed on light tables or stands, so that they can be moved around easily as the sun changes.

Cover with double mosquito netting to keep out the flies and other insects, placing something higher around the platters to keep the netting from getting down into the fruit. In two or three days the syrup about them will thicken up and the fruit become semi-transparent. The time will depend on the intensity of the sun. They are now ready to pack away in jars, self-sealing jars being best for this purpose. Place some granulated sugar over the top, then pour over this melted paraffin, and screw on the lids. If to be partly cooked over the fire before placing in the sun, after placing the platters in the sun a few moments, pour off the juice into a preserving kettle and boil for about 15 minutes. Place the fruit in the boiling syrup and heat thru; then pour onto the platters again and place in the sun. These will thicken up sooner than the others.

Cherries are nice preserved in the same manner. If one does not care to bother with sun-preserves, delicious preserves can be made over the fire in the following manner: Place in a kettle two pounds of sugar and a half cup of water, or enough to wet the sugar, and boil until a syrup. Pour this over two pounds of strawberries in a preserving kettle and let stand over night; then pour off the juice into another kettle and boil until a thick syrup; add the berries and boil for five or ten minutes longer. Transfer the berries to the fruit jars. Boil the syrup a few minutes longer, and pour over the top of fruit until jars are full, then seal up. Preserves made in this way will retain their shape and keep well.

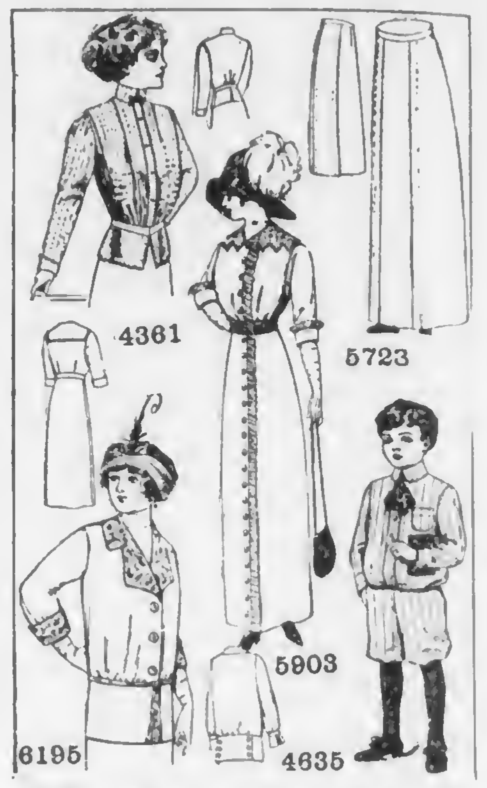
Strawberry sunshine is fine. To make it wash the fruit, then mash it thoroly. Put in a preserving kettle and boil 15 minutes; then add as much sugar as fruit, and boil about 30 minutes, stirring constantly. It is best to take out a little on a plate to try it, as it may not require 30 minutes to make it of the proper consistency.

Cherries are fine, both for canning and for preserves. The sweet cherries are considered the best for canning purposes, altho they lack the richness and decided flavor of the sour cherries. Sweet cherries are best with the seeds left in, as they help to add to the flavor; but sour cherries should be pitted before canning. A good way is to soak them over night, first pitting them. This will make them less tart, and they will plump out when cooked so that you can scarcely tell them from the unseeded cherries. Canned sour cherries make excellent pies, and are nice used in salads and gelatine desserts. When making cherry preserves, sunshine or jelly, if the fruit used is a very tart kind, use one pound of sugar to each pound of fruit; but if rather mild, one-half to two-thirds pound of sugar to a pound of fruit will be plenty.

If cherries are boiled long they will get dark colored, like most fruit, so if you wish a clear red preserve, make a syrup by boiling together two pounds of sugar and one cup of water, add the cherries and allow them to remain about five minutes in the boiling syrup. Transfer to the preserving jars with wire dipper. Boil the syrup until it is ready to jelly. Then pour over the fruit in the jars. Or, if you wish the syrup and berries mixed, place the cherries in the kettle before placing them in the jars. Cherry sunshine is made after the same manner as strawberry sunshine. Use only ripe fruit for this purpose, so that they will mash readily.

PENNSYLVANIA FARMER PATTERNS

Be sure to give the figures and letters of each pattern exactly as printed at the beginning of each description. We will not be responsible for correct filling of your orders unless you do so. Also give bust measure when ordering waist patterns, waist measure for skirt and age for children's patterns. Address Pennsylvania Farmer, 214-18 So. 12th St., Philadelphia, Pa.



4361—Ladies' Shirt Waist Dressing Sack.—Cut in sizes 32 to 44 inches, bust measure. Size 36 requires 2¼ yards of 36-inch material. Price, 10 cents.

5903—Ladies' Dress, with Three-Piece Skirt.—Cut in 6 sizes, 32 to 42 inches, bust measure. Size 36 requires 4¼ yards of 36-inch material. Price, 10 cents.

5723 — Ladies' Four-Gored Skirt, Closed at Left Side of Back.—Cut in sizes 22 to 30 inches, waist measure. Size 24 measures 2½ yards around lower edge and requires 2⅝ yards of 54-inch material. Price, 10 cents.

6195—Ladies' Balkan Coat.—Five sizes, 34 to 42 inches, bust measure. Size 36 requires 3⅜ yards of 36-inch material. Price, 10 cents.

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The Daughter of David Kerr

By HARRY KING TOOTLE.

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PRECEDING CHAPTERS

The city of Belmont is a typical middle-western village, under the rule of the political "boss," David Kerr. The daughter, Gloria, had spent her girlhood away from home and knew nothing of her father's profession or business affairs. Supposing him to be a wealthy real estate merchant and a leader in Belmont society, she came home to take her place in the best circles of the town. To gratify her wish and continue the deception, David Kerr secretly secured the services of Judge Gilbert to introduce and assist Gloria in establishing herself in society. In return Kerr promised to give the full weight of his political influence to secure the passage of a questionable street railway franchise, the money coming from such influence going to Gilbert. Joe Wright, recent purchaser and editor of the Belmont News, met Gloria while traveling abroad. He had fallen in love with her before he was aware that she is the daughter of David Kerr. Since coming to Belmont he found that it was necessary to oppose the "boss" thru the News, and he took up the fight on the street railway franchise, the very measure which was purchasing the services of Judge Gilbert in Gloria's behalf. The opposition of the News to the franchise was the first big fight made against Kerr for years.

CHAPTER IX (Concluded)

The editor of the News recognized that it was only a Phyrric victory he had won by securing the shelving of the franchise for the present. He was not blind to the fact that the franchise would bob up serenely after election. Now that he had aroused the town and had committed himself to a fight against the ring, he determined to carry it on. It had not been his purpose, before the franchise bill had drawn his fire, to enter with great heat into the coming election campaign, but he saw that the impetus given the opponents of the machine would carry them well on toward victory at the polls. Carrying the election would be a great advertisement for the paper. If it lost, the News could not be any worse off than it was now.

Kerr forgot none of the precautions he had taken in being prepared to embarrass Wright in his work if the occasion should arise. The merchants who, through Kerr's influence, had patronized the News, suddenly withdrew their advertising. Many who had been in before the paper had changed hands now ceased to use its columns. If a grocery store was using the News and furnishing supplies to the workhouse or the jail, it faced the alternative of losing a fat account or confining its advertising to the Banner. The proprietor, being part of the machine, else nothing would ever have been purchased from him for the city's use, promptly gave up the News. It was the same with meat markets. Other lines of business were approached in other ways, but the result was always the same—a loss of advertising revenue to the News. Even the railroads were [illegible] in delivering his white paper, and Wright spent many an anxious [illegible] tracing cars from the mill to find [illegible] lost in the Belmont yards.

One valuable source of information was developed by the News in a former machine hanger-on named Jack Dawson. He came to work in the circulation department of the paper, and Wright first heard of him thru the circulation manager. At Wright's request the man came to his office and from his story the editor gathered that he had not received fair treatment at the hands of the other gangsters. He had lived in the disreputable first ward, and had had trouble with Mike Noonan, a ward leader. For his work he had been made a street cleaning inspector, but after having incurred the ire of Noonan had lost his job.

Nothing the enemy did was able to keep Wright from publishing a paper every day. Every issue was a constant reminder to Belmont that things were not as they should be and that the way to remedy conditions was to defeat the city machine at the polls. The editor spent all his daylight hours at his office, and often was there until late in the night in conference with various leaders. The republicans had some old scores to settle, and this was their chance. The postmaster was usually to be found on Kerr's side, altho under cover, but this time he could not afford to use his influence for the democrats in city affairs—even for a consideration. The democratic boss knew the game too well to press him.

In the last days of the campaign the republican leaders learned with surprise that Senator McMinitry, the state republican boss was coming to Belmont for a day. They had not sent for him, and were at a loss to account for the visit. He had not taken anyone into his confidence, merely saying he was coming on business. Why he should journey from Washington to Belmont for so short a stay they could not understand. He gave it out that he was making a flying visit to his home, but he came straight to Belmont. Only two men besides the senator knew his mission, the emissary who carried the message to Washington and the man who sent for him. David Kerr wanted to see him.

It was only three days before election when Senator McMinitry visited Belmont. He went to the Hotel Belmont and took a suite of rooms, but did not register. After talking to David Kerr over the telephone, he ordered an early luncheon for two served in his private parlor. Kerr arrived before the table was spread and immediately began to explain the situation. All thru the meal the two men talked, McMinitry questioning and Kerr explaining.

Practical politics was the business of Senator James McMinitry just as it was of Mr. David Kerr. He had grown up in a republican stronghold and had seen that his chance was with that party, just as Kerr had seen that in Belmont his success lay in corraling the democratic party. Jim McMinitry liked to pose before the public and to make flamboyant speeches. Kerr preferred to sit in his dingy real estate office and pull the strings that made the puppets dance. To him speech making and posing were like the tinsel on a drum major's uniform. He cared only for power, it was immaterial to him how gaudy glory was apportioned.

"It looks like he's got you in bad, Dave," said the senator. "I don't see how I can help you this trip."

Kerr slowly set down his glass of water and straightened up in his chair, for he knew that the deal was now under way. He had played fair with Jim McMinitry and told him just the exact situation.

"Lots o' things can happen, Jim. I've decided to get his paper, but I need votes. It's too close to election You ain't going to let him play you for a sucker. We've got to clean him, or he'll turn on you just as he has on me."

" I guess I ought to wait till he does," was the cautious response. "I've got enough troubles without going out and lassoing a young grizzly bear."

"He ain't got no party," urged Kerr, "and you know how it happens in them towns where such a paper gits a start. He's got these fools in Belmont believing he's George Washington come to life again."

"I'm sorry for you, Dave; but honestly I don't see where I can help out any. It would give me too black an eye, because the boys here have set their hearts on winning this time."

Kerr saw that McMinitry was forcing his hand, and he decided to approach the situation from another side.

"The next legislature'll elect your successor," he suggested.

"I'm going to be my own successor," asserted the senator.

"It's going to be a hot fight," continued Kerr, unmindful of McMinitry's remark. "The state will swing back to the democrats, but nobody knows how the legislature'll be on joint ballot."

"It's going to be republican if I can have anything to say about it."

"Well, you don't seem to be going about it very actively," retorted Kerr with the nearest approach to sarcasm he permitted himself during the interview. "Even if the legislature is republican, you've got a fight on your hands. There's Congressman Jenkinson and old man Graham down in Washington County. He's almost as strong with the G. A. R. vote as you are, and his part of the state ain't had no recognition for a long time."

McMinitry did not answer at once. He got up from the table and walked to the window. When at last he turned to Kerr the question had been gone over thoroly in his mind.

"Well, Dave," he asked with a smile, "what's the answer?"

"You've got to knife your ticket, so's these fool reformers can't carry Belmont."

"What'd I get out of it?" drawled out the senator.

"Seven votes in the house and two in the senate."

Again the republican apostle of practical politics sat back and took stock of the situation. Belmont was nothing to him. It mattered nothing at all to him whether the town was democratic or republican as far as the city affairs were concerned. Nine votes were not to be despised. He was cautious, however, and wanted particulars.

"How you going to deliver?" he asked.

"We've got that many to run this fall and I'll let the republicans have it their own way. Name your men now if you want to."

"That many's bound to make the legislature republican on joint ballot."

Kerr knew this, but he was quite willing to change the political complexion of the legislature of a great state, perhaps hamper the governor in wise and necessary legislation and keep the state from having a democratic senator, all to hold Belmont for his own. McMinitry was no less willing to change victory into defeat and hand the city over to the rapacity of the Interurban Railway Company, only to retain his senatorial office.

"All right," he consented, "but you've got to do two things: take care of some of the boys and muzzle the News. I can't have that paper making trouble for me."

"I'll take care of the boys all right and I've told you what I'm going to do—I'm going to buy the News."

"Can you?"

"I've got to have it, and I don't care how, but it's got to be mine."

"Got any idea?" asked the senator.

"No, but every man's got his price, Jim, in some form or other." If he had had time for reflection, David Kerr would have enjoyed this remark, since it was given a humorous turn by the fact that he had just discovered the price of the junior senator from his own state.

"I'll go up to the postoffice and call on some of the boys," said McMinitry as Kerr rose to go. "I'll have to tell Davidson and Peake. When you get word to them that the News is friendly, they'll pass the word along. You've got three days; that ought to be plenty of time, but you must have the paper or the deal's off. Who'll take it?"

"I don't know yet who we'll get to take it."

"I'll take it."

"Not much," Kerr replied grimly. "I'm going to put it where it wont be no more trouble to me, and it's going to be run from my office."

CHAPTER X

When Gloria Kerr returned from St Louis she found half a hundred calling cards awaiting her. The women she was anxious to meet had called while she was out of town. Those who delayed their visits until her return were people whom she readily recognized as being quite on the outer fringe of society. In them she was not interested. When Gloria went to return the calls of those she had come to know were regarded as the first families of Belmont, she found no one at home.

Somewhat mortified, but making no confession of her feelings even to Mrs. Gilbert, Gloria threw herself into the work of remodeling Locust Lawn with all the vigor she would otherwise have expended upon social duties. Her active superintendence kept her a good part of the time in the country, altho she still made her home with Mrs Gilbert. Sometimes she would pass the night at Locust Lawn out of a sense of duty to her father. The evenings spent in his company were not ones of unalloyed pleasure. More and more she was coming to acknowledge to herself that her father did not, could not enter into her life, into the activities which gave her pleasure.

Kerr honestly tried, but it was impossible. For one thing, he was engaged in a heated political campaign, fighting to retain supremacy. Gloria, on her side, saw that she had been rebuffed socially, and was not on close enough terms of intimacy with her father to tell him about it. The girl knew that he had been the social leader in Belmont, and she was ashamed that she had not been able to win all hearts as he had done.

Gloria's admiration of her father's powers did not lessen upon their better acquaintance. Strange as it may seem, her loyalty to him was strengthened by each turn of fortune's wheel which thrust her back upon herself The frivolous veneer in her nature was being worn away, and the real Gloria was beginning to appear. Kerr's was indeed a powerful personality, and Gloria was coming to see why he was so successful. A woman's intuition and not an understanding of the facts in the case was the girl's tutor. She hugged to her heart the comparison of Joe Wright and her father. In the younger man she saw some of the traits which made her father a power—magnetism, reserve strength, and a logical mind. Wright had that and more: he had all the social graces. To her, however, his greatest appeal was that he was youth, eternal youth, and love.

(To be continued.)

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Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., May 5, 1913.

Under increased supplies butter declined 1c on most grades. The demand for strictly fresh eggs continued firm, and such stock brought satisfactory prices. Dressed poultry was dull and without interest. Offerings were moderate but ample. Vegetables were generally steady, with the exception of potatoes which were in stronger demand.

Butter.—Western creamery, 32c; extras, 30c; firsts to seconds, 28@29c; special prints, 36@39c; near-by prints, 33c.

Cheese.—New York full cream, 17@17¼c; skims, 8¾@11c, according to quality.

Eggs.—Candled, 22½@24c doz.; extras, 21½c. Current receipts at $5.85 per standard case.

Poultry.—Fowls, 17½@18½c; old roosters, 12c; spring chickens, 30@34c; ducks, 14@15c; pigeons, 32@35c pair.

Dressed Poultry.—Western fowls, 18@19½c; roosters, 15c; chickens, 18@19c; turkeys, 20@25c.

Vegetables.—White potatoes, choice, 70@75c bu. Onions, 50@75c bag. Cabbage, $8.00@10.00 ton. Lettuce, $1.25@2.25 basket. Cucumbers, $2.00@3.50 basket. Celery, $1.00@1.10 bch. Spinach, $1.25@2.00 bbl. Kale, 25@50c bbl. Egg plant, $1.75@2.25 box. String beans, $2.50@4.00 bu. Peas, $1.75@2.25 basket. Peppers, $2.00@2.50 carrier. Tomatoes, $2.00@3.50 carrier. Watercress, $1.00@1.50 100 bchs. Asparagus, 10@25c bch. Beets, $2.00@5.00 per 100 bchs.

Fruit.—Apples, choice varieties, 25@75c hamper, $2.00@3.50 bbl. Cranberries, $1.25@2.00 crate. Strawberries, 10@16c qt.

Hay and Grain.—No. 1 timothy, new, $17.50@18.00; No. 2, $15.00@16.00; No. 3 do., $12.00@13.00. No grade, $8.00@10.00. Clover mixed No. 1, $13.50@14.00; No. 2 do., $11.00@12.00. No. 1 tangled rye straw, $13.50@14.00; No. 1 wheat straw, $10.00@10.50; No. 1 oat straw, $10.50@11.00. New shelled corn, No. 2 yellow, 63½@64c; No. 3 yellow, 62@62½c. No. 2 red wheat, 99½c@$1.01½; No. 3 do, 97½@98½c. No. 2 white oats, 42@42½c. Standard white, 41½@42c; No. 3 white, 40½@41c.

Hides and Skins.—Steers, abattoir, 15¼@16¼c.; do. country, 13¾@14¼c. Cows, abattoir, 14¾@15¼c; do. country, 12½c. Bulls, abattoir, 12¼@12¾c; do. country, 11½c. Calf skins, Nos. 5 to 12 and up, $1.35@2.15; do. green, 13@14c lb.

Seeds.—Timothy, $3.15@3.25 bu.; clover, white, $25; do. crimson, $6.25; do. mammoth, $14.50; do. sweet, $13.00; do. alsike, $13.25; red top, per bu., $13.50; alfalfa, $7.00@10.00; Canada field peas, $2.35; vetch, $8.50; rye, winter, $1.37; spring, $2.25; soy beans, $3.25; barley, $2.50; buckwheat, $1.50; cowpeas, $3.00@3.25; millet, $1.90@2.75; oats, $1.25.

Coffee.—Rio, 7s, 11½c; Santos, 4s, 13⅝c. Mild Coffee—Cordova, 14½@17c.

Provisions.—City beef, smoked and air-dried, 22@23c. Beef hams, 31@33c. Pork, family, $21.00@22.00 bbl. Hams, cured, 14½@15½c; skinned, 14¾@15¾c; smoked 17@18c. Other hams, smoked, city cured as to brand, 16@18c. Picnic shoulders, 10@10¾c; do. smoked, 12@12½c. Bellies in pickle, 15@16c. Breakfast bacon as to quality, 17@22c. Lard, refined, 11¾@12½c, do. in tubs, 11½@12c; do. kettle rendered, 11¾@12c. Tallow, prime city, 6⅞@7c. do country, 7⅛c; do. dark, 5⅞c; do. cakes, 7⅜c.

Sugar.—Cut loaf, $5.15 cwt.; cubes, $4.60; powdered, $4.45; granulated, $4.35; standard granulated, $4.40; crystal A, $4.35.

Flour.—For 196 lbs., in wood, winter clear new, $4.15@4.40; do. straight, new, $4.50@4.75; favorite brands, $5.25@5.60. Rye flour, Penna., $3.50@3.75.

BALTIMORE PRODUCE

Baltimore, Md., May 5, 1913.

Under ample supply and a fair demand butter remained steady thruout the week. Eggs were about as last week. Strictly fresh stock is in demand at satisfactory prices. Prices on live poultry are unchanged, and fruits and vegetables remain about as last week.

Butter.—Creamery, fancy, 32@32½c; do., choice, 30@31c; prints and blocks, 32@34c; Maryland and Penna. rolls, 22@24c; prints, 21@22c. Process 29@31c.

Cheese.—Flat, 17½c; Daisy, 18@18½c.

Eggs.—Md. and Penna., firsts, 18c; western, 18c; southern, 17c.

Live Poultry.—Hens, 18½@19c; chickens, 30@32c; old roosters, 11c. Turkeys, 21@25c. Ducks, 13@15c. Geese, 14@15c. Guinea fowls, 20@30c.

Dressed Poultry.—Turkeys, 24@25c; chickens, 20@21c; roosters, 11@12c; ducks, 20@22c, geese, 11@17c.

Vegetables.—Potatoes, white, 50@55c bu. Sweets, $3.00@3.50 bbl. Cabbage, $1.50@1.75 crate. Danish, $6.00@8.00. Onions, 35@40c bushel. Lettuce, 50c@$1.25 bushel. Egg plant, $2.00@3.00 crate. Peppers, $2.50@3.50 crate. Squash, $1.50@1.75 basket. Spinach, 30@40c box. Cucumbers, $2.50@4.00 basket. Beans, green, $3.00@3.50 basket. Celery, $2.50@3.75 crate. Turnips, 10@15c box. Cauliflower, $2.50@2.75 bbl. Horseradish, $1.50@1.65 box. Beets, 2@3c. Asparagus, $1.75@2.25 doz.

Fruit.—Apples, new, $2.00@3.50 bbl.; 50c@$1.00 bu. Strawberries, 8@15c qt.

Grain.—Wheat.—No. 2 red western, $1.09½; spot, $1.09½. Corn, spot, 58½c; contract, 58½c. Oats, No. 2 white 42½@43c; standard white, 42c; No. 3 white, 40@40½c. Rye, 60@65c.

Hay and Straw.—No. 1 timothy, $17.50@18.00. No. 2 timothy, $16.00@16.50. No. 3 do., $12.50@14.00. Choice mixed, $15.00@15.50. No. 1 clover, $11.50@12.00. No. 2 do., $9.00@10.00. No. 1 tangled rye straw, $11.00@12.00. No. 1 oat straw, $9.00@10.00. No. 1 wheat straw, $8.00.

Millfeed.—Spring bran, $21.50@22.00. Middlings, flour to white, $26.00@28.00, western middlings, $22.50@23.00; city mills mids., $24.00@24.50.

NEW YORK PRODUCE

New York City, May 5, 1913.

Under liberal receipts and a somewhat sluggish demand butter declined 1c on most grades. Much of the egg receipts is of inferior quality. The demand for choice stock is good and the market firm. Dressed poultry is in somewhat greater receipt, but under a fair demand the market is steady. Fruits and vegetables are about as last week.

Butter.—Creamery firsts to extras, 27½@29c; thirds to seconds, 26@27c; factory, 25@26½c; state dairy, 25@28½c; packing stock, 22@24c; process, 27@28c.

Cheese.—Whole milk, specials, 13¼@13½c; do. common to fancy, 12@13c; skims, 5@10c.

Eggs.—State and near-by, 21@23c; fresh gathered, 14@21½c; mixed, 19@20½c.

Dressed Poultry.—Turkeys, dry, 18@21c; chickens, Penna., 30@35c; fowls, 14@18½c; old roosters, 14½@15c; ducks, 15@20c; roasters, 19@22c.

Live Poultry.—Fowls, 18c; chickens, 18c; old roosters, 12½c.

Grain.—Easy. Wheat, No. 2 red, nominal. No. 1 Northern, $1.00½. Corn, 62¾c. Oats, standard white, 41½c.

Vegetables.—Potatoes, state, $1.75@1.90 per 165 lb. bag. Cabbage, $1.25@1.50 crate; do. Danish, $12.00@18.00 ton. Green beans, $2.75@4.00 basket. Carrots, 50@75c bag. Cucumbers, 50@90c dozen. Lettuce, $1.50@2.00 bbl. Squash, 75c@$1.75 bbl. Celery, $1.00@4.00 case. Horseradish, $1.00@3.00 cwt. Parsnips, 50c@$1.00 bbl. Turnips, 35@75c. Watercress, $1.00@1.50 per 100 bunches.

Fruit.—Apples, $1.75@4.00 bbl., according to variety. Strawberries, 7@15c qt.

BUFFALO PRODUCE

Buffalo, N. Y., May 5, 1913.

Butter.—Lower. Creamery, choice, 32c; choice dairy, 27@28c.

Cheese.—Slow. Fancy, 17½@18c; good 16@16¼c.

Eggs.—Firm. State, fresh, 20@21c; western, 18@19c.

Dressed Poultry.—Active. Turkeys, per lb., 22@24c; fowls, fancy, 17@19c; chickens, 16@20c; old roosters, 14@15c; ducks, 21@24c; geese, 17@18c.

Live Poultry.—Firm. Chickens, 18@21c; ducks, 21@22c; geese, 15@17c; turkeys, 22@23c; old roosters, 13@14c.

Vegetables.—Potatoes, slow. Home grown, 58c bu. Cabbage, $1.90@2.00 crate. Onions, 60@75c sack. Beans, green, $3.00@4.50 hamp. Turnips, 75@80c bbl. Celery, 50@75c doz. Lettuce, 40@70c.

Beans.—Quiet, steady. Marrow, fancy, $3.35@3.40; medium, $2.40@2.50; red kidneys, $2.00@2.25.

Fruits.—Apples, $2.25@3.00 bbl; 50@75c bu.

Honey.—Firm. No. 1 fancy, 16@17c; No. 2 new, 13@15c; dark, 12c.

Hay.—Firm. Timothy, choice, on track, $17.00@18.00. No. 2 do., $16.00@17.00; No. 3, $14.00@15.50; light mixed, No. 1, $13.00@14.00; rye straw, $10.00; oat and wheat straw, $9.00@10.00.

Feed.—Steady. Spring bran, $20.00 ton. Standard mids., $20.50. Corn meal, $24.50. Gluten, $24.50. Hominy, $24.00. Oilmeal, $27.50. Cottonseed meal, $31.50.

WASHINGTON PRODUCE

Washington, D. C., May 5, 1913.

Eggs.—Near-by, fresh, per dozen, 18@18½c; southern, per doz., 18c.

Cheese.—New York, new, per pound, 16½c; flat, 16½c.

Butter.—Best prints, per pound, 34c; tub, 33c; process, 30@31c; undergrades, 25c.

Live poultry.—Hens, per lb., 17½@18c; roosters, 10c; springers, 30@32c; turkeys, 16@17c; geese, live, 10@12c; ducks, 16@17c.

Vegetables.—Potatoes, bbl., $1.25@1.50; 50@70c bu. Onions, 75c@$1.00 per 100 lb. bag. Lettuce, per bas., 75c@$1.25. Beans, $2.25@3.50 basket. Peppers, per crate, $1.50@2.50. Egg plants, per box, $2.00@3.00. Squash, per bbl., $1.50@2.25. Beets, $1.50@2.00 per 100 bchs. Mushrooms, per lb., 25@40c. Carrots, 2@4c bch. Cabbage, $1.25@2.00 crate. Radishes, 50c@$1 per 100. Cauliflower, $1.00@2.00 crate. Asparagus, $1.25@2.50 doz. Apples, $1.50@4.50 bbl. Strawberries, 10@15c box.

YORK PRODUCE

York, Pa., May 5, 1913.

For the past several weeks the markets have improved decidedly. Butter is in demand at almost winter prices, and eggs are advancing slowly. Prospects for the usual supply of summer and fall fruit are very poor. Peaches, pears, plums, early cherries, early apples and strawberries are frozen or drowned.

Butter.—Country, 33@36c; searator, 32@36c. Milk, 6c per qt.

Eggs.—18@20c.

Poultry.—Hens, 15c lb. Dressed poultry, 40@90c each.

Vegetables.—Potatoes, 8@10c half peck; 15c@60c bu.; cabbage, 2@6c each; lettuce, 5@10c; beets, 3@5c bch; radishes, 2@5c; turnips, 6@9c per ½ pk.; onions, 2@5c bch.; lima beans, 10@14c qt.; soup beans, 8@10c qt.; sweet potatoes, 12@15c per ½ pk.; parsnips, 10c per ½ pk.; sauer kraut, 5@7c qt.; lard, 12@15c lb.; celery, 3@7c; rhubarb, 5c bunch; asparagus, 5@7c bunch.

Fruit.—Apples, 15@30c a half peck; strawberries, 15@20c box.

Retail Grain Market.—Wheat, $1.18; corn, 70c; oats, 50c; bran, $1.15 a cwt.; rye, 70c; middlings, $1.50 a cwt.

Wholesale Grain Market.—Wheat, $1.08; corn, 62c; oats, 39c; rye, 65c.

WILMINGTON PRODUCE

Wilmington, Del., May 5, 1913.

Trading on the markets during the week was normal, and prices remained at about last week's figures. Eggs are more plentiful and the demand for chickens, both live and dressed, has somewhat declined.

Fruits.—Apples, 50@75c basket; $3.00@4.50 bbl. Strawberries, 12@20c box.

Vegetables.—Potatoes, 60@80c bu.; new, $4.50@5.00 bbl. Cabbage, $2.00 crate; 25c bas. Onions, 40c bas. Celery, 60@75c doz. Spinach, $1.25 bbl. Sweet potatoes, 75c@$1.25 basket; $2.50@3.50 bbl. Kale, $1.00 bbl. Lettuce, $1.25 basket. Asparagus $2.50@3.00 doz.

Poultry.—Chickens, live, 18@20c.; do., dressed, 20@22c. Ducks, 13@14c lb., dressed, 18c.

Eggs.—19@20c.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., May 5, 1913.

The cattle market during the past week was weak and a shade lower on all grades.

	Beef Cattle	Sheep and Lambs	Hogs
Total for week	3,845	10,610	4,180
Previous week	3,167	10,901	5,325

Best steers	$8.50@8.60
Choice steers	8.37½@8.50
Good	8.00@8.25
Medium steers	7.75@8.00
Common steers	7.25@7.50
Bulls	6.50@7.25
Fat cows	4.50@6.50
Thin cows	3.00@3.75
Milk cows	40.00@65.00

Veal calves steady.

Best calves	$10.00@10.50
Good to choice do.	9.25@9.75
Medium	7.00@8.00
Common do.	6.50@7.00
Thin do.	5.00@8.00

Sheep and lambs are steady.

Extra wethers	$7.00@7.50
Choice wethers	6.50@7.00
Good wethers	6.00@6.50
Common to medium	3.00@5.50
Ewes, fat	6.00@6.50
Extra lambs	9.50@9.75
Good to choice do.	9.25@9.50
Common to medium	6.00@8.50

The hog market continued steady thruout the week at $12.00@12.25.

City dressed Stock.—Choice classes of dressed meats are steady. Trade is normal. Steers, 13@14c; heifers, 10@13c; cows, 8@11½c. Veal calves, 14@16c; country dressed calves, 14@15c; extra do., 15½c. Sheep, 11@13c; extra wethers, 14c. Spring lambs, 16@18c. Hogs, 12¼@12½c.

PITTSBURGH LIVE STOCK

Pittsburgh, Pa., May 5, 1913.

While supplies were not heavy last week, the market ruled 10 to 25 cents lower, particularly on medium and weighty grades; light cattle were about steady. There were 85 loads on sale today. With a fair demand, the market ruled slow and steady.

Good to choice	$8.35@8.60
Good, 1300 to 1400 lb.	8.25@8.35
Medium to good, 1200-1300 lb	8.25@8.40
Tidy, 1050-1150 lb.	8.10@8.25
Fair to medium, 900-1100 lb.	7.75@8.00
Common to good fat oxen	5.00@7.00
Common, 700-900 lb.	6.00@7.25
Common to good fat bulls	5.00@8.00
Common to good fat cows	4.75@7.25
Heifers, 700 to 900 lbs.	5.50@8.00
Bologna cows	4.00@4.40
Fresh cows and springers	20.00@80.00

Veal calves are 50 cents per cwt. higher. Today's receipts were 800 head.

Heavy and thin calves	$4.50@6.50
Veal calves	7.00@9.50

The supply of hogs was good all last week. The market closed at about 10 cents lower than the first of the week. There were 50 double-deck loads on sale today, and prices went 5c lower.

Prime heavy	$8.55@
Prime medium weights	8.70@
Heavy mixed	8.60@
Best heavy Yorkers	8.70@
Light Yorkers	8.75@
Pigs as to quality	8.70@8.75
Common to good roughs	7.50@8.00
Stags	6.50@7.00

Sheep and lambs have been in fair demand for best grades; others lower. Spring lambs are a shade stronger. There were 25 double-deck loads on sale today. Choice grades were steady; others slow and lower.

Prime wethers, clipped	$5.85@6.00
Good mixed	5.50@5.75
Fair mixed ewes and wethers	4.50@5.25
Culls and commons	2.50@4.00
Spring lambs	7.00@10.00
Culls to choice lambs	4.00@8.15

BUFFALO LIVE STOCK

Buffalo, N. Y., May 5, 1913.

Cattle receipts today were 130 cars. Receipts were liberal all last week and the market was quiet for choice butcher cattle.

Choice heavy steers	$8.00@8.50
Medium	8.00@8.40
Yearlings	8.50@8.75
Plain heavy	7.75@8.00
Handy butchers	6.75@8.60
Good to choice fat cows	6.00@7.25
Good to choice heifers	7.25@8.10
Butcher bulls	7.00@7.50
Feeders	6.00@7.75
Stockers	4.75@6.25
Cows and springers	40.00@85.00

The calf market was firm all last week and prices remained firm. With 2,000 head on sale the market showed further decline.

Choice veals	$9.00@9.50
Light and thin	4.00@6.50

Sheep and lambs were steady last week under a liberal supply. Today's receipts were heavy. The market was lower. Clipped lambs are in good demand.

Clipped lambs	$8.00@8.25
Poorer grades	6.00@6.50
Yearlings	7.00@7.50
Wethers	6.25@6.40
Ewes	5.25@5.75
Sheep	6.00@6.25

Hogs of all grades sold easier thruout all of last week. Prices were a little lower generally. With 110 cars on sale today prices went still lower.

Heavies	$8.50@8.60
Mixed and medium	8.40@8.50
Yorkers	8.55@8.60
Light Yorkers	8.55@8.60
Pigs	8.55@8.60
Roughs	7.50@7.70
Stags	6.50@7.50

NEW YORK LIVE STOCK

New York City, May 5, 1913.

Cattle receipts for the week were 3,287 head. The market is irregular.

Steers	$6.15@8.85
Bulls	5.50@7.75
Cows	3.50@6.75

Dressed beef weak. Native sides 11½@13c.

Calf receipts were 8,658 head. The market is 25c lower.

Choice veals	$7.00@10.25
Good veals	6.00@7.50
Culls	6.00@6.50

Dressed calves are steady.

City dressed veals	13@15½c
Country dressed veals	11@14c

Sheep and lamb receipts were 8,659 head. The market is irregular.

Wooled sheep	$5.00@6.90
Clipped sheep	4.00@6.30
Unshorn lambs	7.25@9.25
Clipped lambs	6.50@8.40
Spring lambs	8.00@10.50

Hog receipts were 10,322 head. The market is lower at $8.75@9.00.

BALTIMORE LIVE STOCK

Baltimore, Md., May 5, 1913.

Beef receipts for the week were 1,510 head. The market is steady.

Steers	$7.00@8.40
Heifers	5.00@7.50
Cows	3.50@6.25
Bulls	6.00@7.25
Fresh cows	27.50@77.50

Sheep and lamb receipts were 2,714 head. Under a fair supply the market is slow.

Sheep	$2.50@6.00
Lambs	6.00@9.30
Spring lambs	4.90@10.50

There were 8,682 hogs on sale during the week. Under a liberal supply the market is lower.

Light western	$9.00@
Heavy to medium	8.75@9.00
Near-by	8.80@8.90
Pigs	8.75@8.85
Roughs	7.00@8.25

Calf receipts for the week were 298 head. Most of the receipts were of unattractive stock, and under a light supply the market is lower at $5.50@10.00.

ELGIN BUTTER QUOTATION

Elgin, Ill., May 5, 1913.

The quotation committee of the Elgin Board of Trade this afternoon declared butter steady at 28c a pound.

NEW YORK MILK QUOTATION

The wholesale milk price is $1.61 per 40 quart can for class C; class B, $1.71.

PITTSBURGH HAY AND GRAIN

Pittsburgh, Pa., May 5, 1913.

While hay receipts are moderate, they are mostly of inferior stock, which is practically unsalable. No. 1 timothy is scarce and in strong demand. Hay receipts are light but fully equal to the demand. The market is slow. No. 1 timothy, $15.75@16.00; No. 2 do., $13.00@14.00; No. 3 do., $10.00@12.00; No. 1 light mixed, $13.00@13.50; No. 1 clover mixed, $13.00@13.50; No. 2 do., $9.00@10.00. No. 1 clover, $12.50@13.00; No. 2 do., $8.00@10.00. No. 3 prairie, $10.00@10.50, No. 4 do., $8.00@9.00; No. 1 oat straw, $8.50@9.00; No. 2 do., $8.00@8.50; No. 1 wheat, $8.50@9.00; No. 2 do. $8.00@8.50; No. 1 rye, $11.00@11.50; No. 2 do., $9.25@9.50. Ear corn arrivals are in strong demand. Market stronger. No. 2 yellow, 65@66c; No. 2 high mixed, 63@64c. Shelled corn receipts are in excess of the demand. No. 3 yellow natural, 61@61½c, sample, 59@60c. Oats are in fair demand and the market is weak. No. 2 white, 40@40½c; standard, 39@39½c; No. 3 do. 37@38c; No. 4 do., 35@36c. The demand for middlings is very slow. Market dull. No. 2 white mids., $23.50@24.00; No. 1 bran, coarse, $21.50@22.00; do., medium brown mids., $21.00@21.50. Winter wheat $20.50@21.00.

TOBACCO MARKET

It is now an assured fact that there will be considerable Havana Tobacco grown in the state the present year. Dissatisfied with prices, many growers hope to get better returns from this comparatively unknown variety. Havana commands much higher prices per pound, but the yield per acre is less, so there is some doubt as to the comparative profits, and there is a risk as to the quality of the new product. However, the small amounts which have been grown in past years are said to have been of fair average quality. It is estimated that 1,000 acres of this variety will be grown in the state.

Tobacco plants are now well up and growing rapidly these warm days. With a continuation of favorable conditions, transplanting will begin late in this month. Some localities report the presence of snails in beds, resulting in damage to the plants. Such beds may yet be sown over, but this precludes timely results. If taken at the proper time, these pests can be easily controlled by the use of a weak solution of paris green and water sprinkled over the beds at a time when plants are free from dew.

Less than 10 percent of the 1912 crop is yet in growers' hands and this is being gradually sold. The demand is better than heretofore and prices, while not quotably higher, stiffened during the week. The general tobacco market, as reported by New York authorities, is not at all good. Trading is slow and despite the prediction that flood conditions would improve the situation in the East, the same has not as yet been true.

The efforts of the Lancaster representative in Congress in behalf of agricultural interests is worthy of special attention. In a recent speech there, he very fittingly characterized the proposed tariff bill as "a drastic piece of legislation aimed at those who work in the fields, submitted to and sanctioned by the President and the Democratic caucus." In supporting his opposition to the measure, attention was called to the comparatively low prices of labor in foreign countries and the great increase in their exports in the United States which would result from the removal of the present duty. It is cited that Orientals live cheaply, with a low standard of life, making it possible for them to exist on a wage that would mean want to the American farmer and farm laborer.—H. E. Tweed, May 5, 1913.

Dressing Veal and Poultry.—Extension Bulletin 31 of the Minnesota Farmers' Library, at University Farm, St. Paul, Minn., contains a discussion of dressing and marketing veal and poultry. The age at which to slaughter, grades, handling previous to slaughter, dressing and shipping are given in detail, together with photographs illustrative of the description. This bulletin is valuable to all farmers raising veal or poultry.

Lime and Sulfur for Potatoes.—The question of the possibility of substituting lime and sulfur for other fungicides as a potato spray has long been discussed. The New York Experiment Station, at Geneva, N. Y., has made valuable tests on this point which are summarized in Bulletin 352. The conclusion drawn from these investigations are that lime and sulfur can never replace bordeaux mixture as a preventative for potato diseases. Lime and sulfur caused dwarfing of the plants, apparently increased tip burn, did not check late blight and rot and resulted in decreased yields.

Veterinary

(Conducted by W. C. Fair, V. S.)

(Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also name and address of writer. Initials only will be published. When reply by mail is requested, it becomes private practice, and a fee of $1 must accompany the letter. This is one of the most valuable columns of the paper and we invite readers to make use of it. Clippings from this column, when properly preserved and classified, would make one of the most valuable medical symposiums a farmer-stockman could obtain.)

Mange.—I have a horse that is itchy from head to foot. His skin is dry and scaly; he rubs and bites himself whenever he gets a chance. What would cure him? J. F. C., White Oak, Pa.—Give your horse ½ oz. Donovan's solution of arsenic at a dose in feed, 3 times a day. Clip him and apply 1 part sulfur, ½ part of carbonate of potash and 4 parts fresh lard to itchy parts of body, once a day. Also apply 1 part bichloride mercury and 1,000 parts water after using the other ointment 10 days or two weeks. Or apply 1 part chinosol and 250 parts water. He should be thoroly washed with soft soap and water, twice a week.

Grub in the Head.—Our sheep seem to have what is called grub in the head or something similar to that. They lose control of their limbs, will not eat and only live a day or two. These sheep seem to be in good condition and their heads seem to be the only part of body that is affected. What can be done for them? O. H. F., Mercer, Pa.—The grub in the head of sheep is the larva of a small gad-fly, which deposits its live embryo on the margin of the nostrils; it passes up the nasal cavities into the sinuses and nests, just below the eyes. During July, August and September these gad-flies bother sheep most. If sheep were allowed to run on a plowed field they could then rub their nose, and often times prevent having grub in the head. You had better blow some Scotch snuff into the nose, twice a day, or burn some red pepper to cause sneezing, and perhaps this will dislodge most of the grubs. Grubs are usually passed out of the head soon as warm weather sets in. In my practice I frequently find it necessary to trephine thru the bones of the face between the eyes and median line of the face or just in front of the horn, if the sheep has horns. Then wash out grubs with a weak salt solution. Sheep that have grubs in the head should be well fed and treated in time.

Eczema.—We have a horse that is inclined to rub himself whenever he has a chance, and this itchy condition of skin must extend pretty near over the whole body. He likes to be curried, and when I am cleaning him he leans over as if it felt good. He also has scratches on one hind leg and discharges mucus from both nostrils. Do you think he has a cold, or is it distemper? We do not know much about horses, and would appreciate any information you give us. J. F. M., Birdsboro, Pa.—Clip your horse, wash him with soap and water, twice a week; also apply 1 part chinosol and 250 parts water, twice a day for a week; then apply 1 part bichloride mercury and 500 parts water, twice a day, alternating these two remedies every week. Give him ½ oz. Donovan's solution at a dose, 3 times a day. The same medicine should be applied to heels. I am inclined to believe that he has taken cold and will soon get well of his catarrh.

Scurvy.—I have some young cattle, yearlings and two-year-olds, that have scurvy. The hair sheds out and the skin becomes rough. One of these older ones had warts on last summer, but they have all disappeared. This scurvy or roughness is most apt to be around the eyes, on eye lids and in some cases near root of tail where the hair is short. One has blotches on inside of hind legs and back part of udder. On parts of body this scurf is light grey in color, raised up in places, and when rough scurf is picked off, skin looks red and raw. These cattle have been tied up in stanchions at night and run loose thru the day, fed on ensilage and timothy hay. I dehorned the older ones about a month ago and one of them had very sore eyes, but her eyes are all right now. T. E. M., Rea, Pa.—Mix 1 part coal tar disinfectant and 5 parts vaseline and apply to itchy and sore parts of body, once a day. Give each of your cattle 1 oz. of bicarbonate of soda and a teaspoonful of salt at a dose in feed, 2 or 3 times a day.

COUNTY NOTES

Potter Co., Pa. (N. C.), April 14.—Having plenty of rain. Some of the winter rye and wheat is looking fine. Horses are scarce and high; also cattle. Veal, 12c, dressed; apples, 50c bu.; potatoes, 50c bu.; eggs, 20c doz.; butter, 35c lb. Some plowing is being done. The roads are worked now, so wheeling is heavy.—Louis J. Zundel.

Wicomico Co., Md. (S. E.), April 20.—Weather holding cold; some frosts. Prices are a little lower. Stock in good condition. Corn, 60c; live fowls, 16c lb.; eggs, 16c doz.; butter, 30c lb.; potatoes, 50c bu. Work well ahead. Cantaloupes, cucumbers and some watermelons planted. Clover and wheat is going to be short.—W. R. Strong.

McKean Co., Pa. (N. C.), April 19.—Warm with local showers. Stock in good condition. Beef still increasing in price. Veal, 12c, wholesale; hogs, 9c to 11c; beef, 9c and 10c per side. Ground is nearly ready for oats. A few dry days will set a good pace for spring. Wet weather has kept work back some, but willing hearts and strong hands will soon arrange matters.—M. Ingalsby.

Montgomery Co., Md. (C.), April 18.—Extremely wet and disagreeable. Live stock selling well. Corn, $3.75 bbl.; wheat, $1.02 bu.; eggs, 18c doz.; potatoes, 80c bu. Meat of all kinds rather higher than in the past. Farm work and general conditions generally behind, due to rains. No spring plowing done. Few gardens planted as yet.—Prof. S. D. Gray.

Sullivan Co., Pa. (N. C.), April 19.—Fair and cool, with indications of frost. Live stock in fair condition but scarce. Horses are selling at high prices. Pigs are selling at $6 per pair. Winter grain looks good. There is fear that the fruit will be killed by frost. Butter, 30c; eggs, 16c. Farmers are busy plowing for oats; scarcely any sowed yet. Roads are quite rough, having just been worked. Colby Grange is thriving.—Geo. G. Junk.

Juniata Co., Pa. (C.), April 22.—Cool and dry. Frost on 20th and 21st. Stock in good condition. Winter wheat and grass very fine. Cherries killed and other fruit injured by yesterday's freeze. Wheat, $1; corn, 70c; oats, 40c; butter, 38c, eggs, 16c; beef cattle, 6c to 7c; chickens, 60c to 80c each. Oats sowing half done. Plowing for corn well forward. Health good. Farm labor scarce and wages high.

Fayette Co., Pa. (S. W.), April 21.—Fair and cool; heavy frosts. Live stock in good demand, but supply is limited. No stock cattle for sale. Horses $150 to $300; scarce at that. Hogs high and scarce. Pigs selling for $8 to $10 per pair. Farm work being rushed. Most of plowing done. Most of oats sowed. Some gardens made. Winter wheat looking fairly good. Some froze out during open winter.—Samuel A. Harris.

Green Co., Pa. (S. W.), April 21.—Weather cool; hard freezes April 20 and 21. Live stock scarce; pigs $5 to $6 pair at weaning; sheep from $2 to $6 per head; cows, $60 to $90; eggs, 18c doz.; butter, 35c lb.; oats, 40c; wheat, $1.10; corn, 60c. Some oats sowed, but still some ground to be plowed. Very few potatoes planted. Fruit outlook is not promising since recent freezes.—C. E. Addleman.

Frederick Co., Md. (N. C.), April 25.—Warm and no rain for a week. Some live stock on pasture. Still plenty of long feed; stock in good condition and very high in price. Wheat looking good. Pasture not so good; 80 percent of young clover disappeared during winter. Some little corn planted. Lots of ground ready to plant. A lot of fruit, or nearly all in some places, frozen by last freeze. We think the apples not hurt.—H. C. Fawley.

Charles Co., Md. (S. C.), April 26.—This county lies on the Potomac River, 50 miles south of Washington, D. C. It is strictly an agricultural section needing settlers. Lands are of fine quality of soil, a great deal of which has been badly farmed in years back, but with improved methods and good implements there is a decided improvement in condition of the farms. Corn is selling at 70c to 80c bu.; potatoes, 60c to 70c; seed potatoes, $1; eggs, 16c; butter, 25c; veals, high and scarce. Some few shipping cream to Washington at satisfactory prices. Farmers generally thru plowing for corn. Some planting. Wheat and grass looking well. Stock in good condition. Many peaches injured by late frost and cold; less than half crop. Apples and pears seem to be safe.—Robert Mallory.

Union Co., Pa. (C.), April 28.—Weather was fair till Sunday; now rainy. Live stock scarce and high. Horses as high as $600 pair; cows, $40@100; 6 weeks-old pigs, $3 to $5 each. Crops all look fine. Wheat, $1. corn, 50c; oats, 40c; rye, 62c. Poultry scarce and high. Live stock looks fine. Farm work is rushed. Oats all sowed. Corn ground about half plowed. Sod plows very hard. Fruit trees all in full bloom.—H. Lee Herman.

BOOK NOTICES

Agronomy, Practical Gardening for High Schools, by Willard N. Clute. Bound in cloth; 5½ x 7½ inches; 296 pages; fully illustrated. Published by Ginn & Co., Boston, Mass. Price, $1.

This is a book designed especially for high school students in cities and towns, giving a thoro grounding in the principles underlying propagation, cultivation, and improvement of plants which can be used in garden and lawn work, and to serve further as fundamental to more extensive agricultural training in case the student wants to take it up. The book has chapters on origin and composition of soils, effects of heat, light and moisture on plants, planting, tillage, weeds, propagation, decorative planting, pruning, plant diseases, insect pests, plant breeding, etc. All the exercises outlined may be performed in the ordinary high school and do not require expensive equipment. The book should prove of value to all high schools now taking up this work and particularly valuable to schools in cities and small towns.

Manual of Practical Farming, by John McLennan, Ph. M., Superintendent of Farms at New York State School of Agriculture, Alfred, N. Y. Cloth bound; 5 x 7½ inches; 298 pages; fully illustrated. Published by The Macmillan Company, 66 Fifth Ave., New York City. Price, 50 cents.

This book should appeal to the practical farmer and student of farming. It is a plain discussion of the every-day work of the farm in the light of established scientific facts. The subject matter is admirably arranged as a finished discussion but each chapter is complete in its treatment of specific subjects. The book is divided into two parts, the first dealing with the soil and its treatment in general farming and with general farm crops; the second with animal husbandry, including all classes of farm animals. The farmer who wants the results of scientific research as applied to the common things in agriculture will find them in this book stated in simple language and arranged for ready reference.

Plants and Their Uses, by Frederick Leroy Sargent, former instructor in botany in the University of Wisconsin. Cloth bound; 5 x 7½ inches; 610 pages; profusely illustrated. Published by Henry Holt & Co., New York. Price, $1.25.

Plants and Their Uses is designed as an introduction to botany, but it is more; it is an introduction to the entire subject of agriculture thru the study of plants. It is intended for rural or high school use, and teaches thru what may be called the historical method; that is, it starts with the plants familiar to all and traces their economic uses, and thus leads to classification and scientific study of all economic plants. This book has chapters on plants generally, cereals, food plants, flavoring and beverage plants, medicinal and poisonous plants, industrial plants, followed by the strictly botanical studies, as classification, life histories, etc. For school work and for the study of botany from a practical, economic standpoint, this is the best book we have ever seen.

How to Grow Vegetables, by Allen French. Cloth bound; 5 x 7½ inches; 312 pages; fully illustrated. Published by The Macmillan Company, 66 Fifth Ave., New York City. Price, 50 cents.

This is a new edition of the book previously published under the title "The Book of Vegetables." It is a valuable compilation of the latest information on vegetable planting, designed to be of particular assistance to those who have to do with vegetable seeds. The vegetables are discussed in alphabetical order, and the subject matter is well condensed to make the book a handy reference and practical guide.

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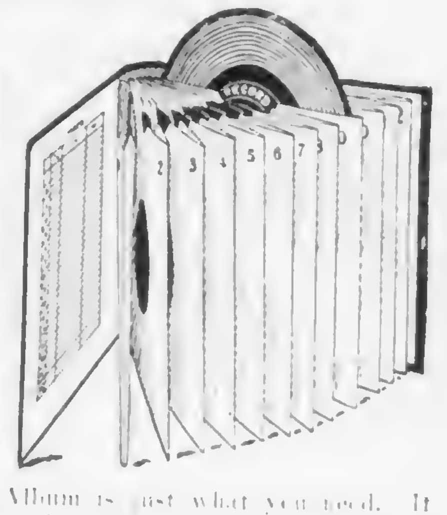

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PENNSYLVANIA FARMER, 214 South 12th Street, Philadelphia, Pa.

Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., May 5, 1913.

Under increased supplies butter declined 1c on most grades. The demand for strictly fresh eggs continued firm, and such stock brought satisfactory prices. Dressed poultry was dull and without interest. Offerings were moderate but ample. Vegetables were generally steady, with the exception of potatoes which were in stronger demand.

Butter.—Western creamery, 32c; extras, 30c, firsts to seconds, 28@29c; special prints, 36@39c; near-by prints, 33c.

Cheese.—New York full cream, 17@17¼c; skims, 8¾@11c, according to quality.

Eggs.—Candled, 22½@24c doz.; extras, 21½c. Current receipts at $5.55 per standard case.

Poultry.—Fowls, 17½@18½c; old roosters, 12c; spring chickens, 30@34c; ducks, 11@15c; pigeons, 32@35c pair.

Dressed Poultry.—Western fowls, 18@19½c; roosters, 15c; chickens, 18@19c; turkeys, 20@25c.

Vegetables.—White potatoes, choice, 70@75c bu. Onions, 50@75c bag. Cabbage, $8.00@10.00 ton. Lettuce, $1.25@2.25 basket. Cucumbers, $2.00@3.50 basket. Celery, $1.00@1.10 bch. Spinach, $1.25@2.00 bbl. Kale, 25@50c bbl. Egg plant, $1.75@2.25 box. String beans, $2.50@4.00 bu. Peas, $1.75@2.25 basket. Peppers, $2.00@2.50 carrier. Tomatoes, $2.00@3.50 carrier. Watercress, $1.00@1.50 100 bchs. Asparagus, 10@25c bch. Beets, $2.00@5.00 per 100 bchs.

Fruit.—Apples, choice varieties, 25@75c hamper, $2.00@3.50 bbl. Cranberries, $1.25@2.00 crate. Strawberries, 10@16c qt.

Hay and Grain.—No. 1 timothy, new, $17.50@18.00; No. 2, $15.00@16.00; No. 3 do., $12.00@13.00. No grade, $8.00@10.00. Clover mixed No. 1, $13.50@14.00; No. 2 do., $11.00@12.00. No. 1 tangled rye straw, $13.50@14.00; No. 1 wheat straw, $10..00@10.50; No. 1 oat straw, $10.50@11.00. New shelled corn, No. 2 yellow, 63½@64c; No. 3 yellow, 62@62½c. No. 2 red wheat, 99½c@$1.01½; No. 3 do. 97½@98½c. No. 2 white oats, 42@42½c. Standard white, 41½@42c; No. 3 white, 40½@41c.

Hides and Skins.—Steers, abattoir, 15¼@16¼c.; do. country, 13¾@14¼c. Cows, abattoir, 11¾@15¼c. do. country, 12½c. Bulls, abattoir, 12¼@12¾c; do. country, 11½c. Calf skins, Nos. 5 to 12 and up, $1.35@2.45; do. green, 13@14c lb.

Seeds.—Timothy, $3.15@3.25 bu.; clover, white, $25; do. crimson, $6.25; do. mammoth, $14.50; do. sweet, $13.00; do. alsike, $13.25; red top, per bu., $13.50; alfalfa, $7.00@10.00; Canada field peas, $2.35; vetch, $8.50; rye, winter, $1.37; spring, $2.25; soy beans, $3.25; barley, $2.50; buckwheat, $1.50; cowpeas, $3.00@3.25; millet, $1.90@2.75; oats, $1.25.

Coffee.—Rio, 7s, 11½c; Santos, 4s, 13⅜c. Mild Coffee Cordova, 14½@17c.

Provisions.—City beef, smoked and air-dried, 22@23c. Beef hams, 31@33c. Pork, family, $21.00@22.00 bbl. Hams, cured, 14½@15½c; skinned, 14¾@15¾c; smoked 17@18c. Other hams, smoked, city cured as to brand, 16@18c. Picnic shoulders, 10@10¾c; do. smoked, 12@12½c. Bellies in pickle, 15@16c. Breakfast bacon as to quality, 17@22c. Lard, refined, 11¾@12½c; do in tubs, 11½@12c; do. kettle rendered, 11¾@12c. Tallow, prime city, 6⅞@7c; do country, 7⅛c; do. dark, 5⅞c; do. cakes, 7⅜c.

Sugar.—Cut loaf, $5.15 cwt.; cubes, $4.60; powdered, $4.45, granulated, $4.35; standard granulated, $4.40; crystal A, $4.35.

Flour.—For 196 lbs., in wood, winter clear, new, $4.15@4.40; do. straight, new, $4.50@4.75; favorite brands, $5.25@5.60. Rye flour, Penna., $3.50@3.75.

BALTIMORE PRODUCE

Baltimore, Md., May 5, 1913.

Under ample supply and a fair demand butter remained steady thruout the week. Eggs were about as last week. Strictly fresh stock is in demand at satisfactory prices. Prices on live poultry are unchanged, and fruits and vegetables remain about as last week.

Butter.—Creamery, fancy, 32@32½c; do., choice, 30@31c; prints and blocks, 32@34c; Maryland and Penna. rolls, 22@24c; prints, 21@22c. Process 29@31c.

Cheese.—Flat, 17½c; Daisy, 18@18½c.

Eggs.—Md. and Penna., firsts, 18c; western, 18c; southern, 17c.

Live Poultry.—Hens, 18½@19c; chickens, 30@32c; old roosters, 11c. Turkeys, 24@25c. Ducks, 13@15c. Geese, 14@15c. Guinea fowls, 20@30c.

Dressed Poultry.—Turkeys, 24@25c; chickens, 20@21c; roosters, 11@12c; ducks, 20@22c; geese, 11@17c.

Vegetables.—Potatoes, white, 50@55c bu. Sweets, $3.00@3.50 bbl. Cabbage, $1.50@1.75 crate. Danish, $6.00@8.00. Onions, 35@40c bushel. Lettuce, 50c@$1.25 bushel. Egg plant, $2.00@3.00 crate. Peppers, $2.50@3.50 crate. Squash, $1.50@1.75 basket. Spinach, 30@40c box. Cucumbers, $2.50@4.00 basket. Beans, green, $3.00@3.50 basket. Celery, $2.50@3.75 crate. Turnips, 10@15c box. Cauliflower, $2.50@2.75 bbl. Horseradish, $1.50@1.65 box. Beets, 2@3c. Asparagus, $1.75@2.25 doz.

Fruit.—Apples, new, $2.00@3.50 bbl.; 50c@$1.00 bu. Strawberries, 8@15c qt.

Grain.—Wheat.—No. 2 red western, $1.09½; spot, $1.09½. Corn, spot, 58½c; contract, 58½c. Oats, No. 2 white, 42½@43c; standard white, 42c; No. 3 white, 40@40½c. Rye, 60@65c.

Hay and Straw.—No. 1 timothy, $17.50@18.00. No. 2 timothy, $16.00@16.50. No. 3 do., $12.50@14.00. Choice mixed, $15.00@15.50. No. 1 clover, $11.50@12.00. No. 2 do., $9.00@10.00. No. 1 tangled rye straw, $11.00@12.00. No. 1 oat straw, $9.00@10.00. No. 1 wheat straw, $8.00.

Millfeed.—Spring bran, $21.50@22.00; Middlings, flour to white, $26.00@28.00; western middlings, $22.50@23.00; city mills mids., $24.00@24.50.

NEW YORK PRODUCE

New York City, May 5, 1913.

Under liberal receipts and a somewhat sluggish demand butter declined 1c on most grades. Much of the egg receipts is of inferior quality. The demand for choice stock is good and the market firm. Dressed poultry is in somewhat greater receipt, but under a fair demand the market is steady. Fruits and vegetables are about as last week.

Butter.—Creamery firsts to extras, 27½@29c; thirds to seconds, 26@27c; factory, 25@26½c; state dairy, 25@28½c; packing stock, 22@24c; process, 27@28c.

Cheese.—Whole milk, specials, 13¼@13½c; do. common to fancy, 12@13c; skims, 5@10c.

Eggs.—State and near by, 21@23c; fresh gathered, 14@21½c; mixed, 19@20½c.

Dressed Poultry.—Turkeys, dry, 18@21c; chickens, Penna., 30@35c; fowls, 14@18½c; old roosters, 14½@15c; ducks, 15@20c; roasters, 19@22c.

Live Poultry.—Fowls, 18c; chickens, 18c; old roosters, 12½c.

Grain.—Easy. Wheat, No. 2 red, nominal. No. 1 Northern, $1.00½. Corn, 62¾c. Oats, standard white, 41½c.

Vegetables.—Potatoes, state, $1.75@1.90 per 168-lb. bag. Cabbage, $1.25@1.50 crate; do. Danish, $12.00@18.00 ton. Green beans, $2.75@4.00 basket. Carrots, 50@75c bag. Cucumbers, 50@90c dozen. Lettuce, $1.50@2.00 bbl. Squash, 75c@$1.75 bbl. Celery, $1.00@4.00 case. Horseradish, $1.00@3.00 cwt. Parsnips, 50c@$1.00 bbl. Turnips, 35@75c. Watercress, $1.00@1.50 per 100 bunches.

Fruit.—Apples, $1.75@4.00 bbl., according to variety. Strawberries, 7@15c qt.

BUFFALO PRODUCE

Buffalo, N. Y., May 5, 1913.

Butter.—Lower. Creamery, choice, 32c; choice dairy, 27@28c.

Cheese.—Slow. Fancy, 17½@18c; good 16@16¼c.

Eggs.—Firm. State, fresh, 20@21c; western, 18@19c.

Dressed Poultry.—Active. Turkeys, per lb., 22@24c; fowls, fancy, 17@19c; chickens, 16@20c; old roosters, 14@15c; ducks, 21@24c; geese, 17@18c.

Live Poultry.—Firm. Chickens, 18@21c; ducks, 21@22c; geese, 15@17c; turkeys, 22@23c; old roosters, 13@14c.

Vegetables.—Potatoes, slow. Home grown, 58c bu. Cabbage, $1.90@2.00 crate. Onions, 60@75c sack. Beans, green, $3.00@4.50 hamp. Turnips, 75@80c bbl. Celery, 50@75c doz. Lettuce, 40@70c.

Beans.—Quiet, steady. Marrow, fancy, $3.35@3.40; medium, $2.40@2.50; red kidneys, $2.00@2.25.

Fruits.—Apples, $2.25@3.00 bbl; 50@75c bu.

Honey.—Firm. No. 1 fancy, 16@17c; No. 2 new, 13@15c; dark, 12c.

Hay.—Firm. Timothy, choice, on track, $17.00@18.00, No. 2 do., $16.00@17.00, No. 3, $14.00@15.50; light mixed, No. 1, $13.00@14.00; rye straw, $10.00; oat and wheat straw, $9.00@10.00.

Feed.—Steady. Sring bran, $20.00 ton. Standard mids., $20.50. Corn meal, $24.50. Gluten, $24.50. Hominy, $24.00. Oilmeal, $27.50. Cottonseed meal, $31.50.

WASHINGTON PRODUCE

Washington, D. C., May 5, 1913.

Eggs.—Near by, fresh, per dozen, 18@18½c; southern, per doz., 18c.

Cheese.—New York, new, per pound, 16½c; flat, 16½c.

Butter.—Best prints, per pound, 34c; tub, 33c; process, 30@31c; undergrades, 25c.

Live poultry.—Hens, per lb., 17½@18c, roosters, 10c; springers, 30@32c; turkeys, 16@17c; geese, live, 10@12c; ducks, 16@17c.

Vegetables.—Potatoes, bbl., $1.25@1.50; 50@70c bu. Onions, 75c@$1.00 per 100 lb. bag. Lettuce, per bas., 75c@$1.25. Beans, $2.25@3.50 basket. Peppers, per crate, $1.50@2.50. Egg plants, per box, $2.00@3.00. Squash, per bbl., $1.50@2.25. Beets, $1.50@2.00 per 100 bchs. Mushrooms, per lb., 25@40c. Carrots, 2@4c bch. Cabbage, $1.25@2.00 crate. Radishes, 50c@$1 per 100. Cauliflower, $1.00@2.00 crate. Asparagus, $1.25@2.50 doz. Apples, $1.50@4.50 bbl. Strawberries, 10@15c box.

YORK PRODUCE

York, Pa., May 5, 1913.

For the past several weeks the markets have improved decidedly. Butter is in demand at almost winter prices, and eggs are advancing slowly. Prospects for the usual supply of summer and fall fruit are very poor. Peaches, pears, plums, early cherries, early apples and strawberries are frozen or drowned.

Butter.—Country, 33@36c; searator, 32@36c. Milk, 6c per qt.

Eggs.—18@20c.

Poultry.—Hens, 15c lb. Dressed poultry, 40@90c each.

Vegetables.—Potatoes, 8@10c half peck; 15c@60c bu.; cabbage, 2@6c each; lettuce 5@10c; beets, 3@5c bch; radishes, 2@5c; turnips, 6@9c per ½ pk.; onions, 2@5c bch.; lima beans, 10@14c qt.; soup beans, 8@10c qt.; sweet potatoes, 12@15c per ½ pk.; parsnips, 10c per ½ pk.; sauer kraut, 5@7c qt.; lard, 12@15c lb.; celery, 3@7c; rhubarb, 5c bunch; asparagus, 5@7c bunch.

Fruit.—Apples, 15@30c a half peck; strawberries, 15@20c box.

Retail Grain Market.—Wheat, $1.18; corn, 70c; oats, 50c; bran, $1.15 a cwt.; rye, 70c; middlings, $1.50 a cwt.

Wholesale Grain Market.—Wheat, $1.08; corn, 62c; oats, 39c; rye, 65c.

WILMINGTON PRODUCE

Wilmington, Del., May 5, 1913.

Trading on the markets during the week was normal, and prices remained at about last week's figures. Eggs are more plentiful and the demand for chickens, both live and dressed, has somewhat declined.

Fruits.—Apples, 50@75c basket; $3.00@4.50 bbl. Strawberries, 12@20c box.

Vegetables.—Potatoes, 60@80c bu.; new, $4.50@5.00 bbl. Cabbage, $2.00 crate; 25c bas. Onions, 40c bas. Celery, 60@75c doz. Spinach, $1.25 bbl. Sweet potatoes, 75c@$1.25 basket; $2.50@3.50 bbl. Kale, $1.00 bbl. Lettuce, $1.25 basket. Asparagus, $2.50@3.00 doz.

Poultry.—Chickens, live, 18@20c.; do., dressed, 20@22c. Ducks, 13@14c lb., dressed, 18c.

Eggs.—19@20c.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., May 5, 1913.

The cattle market during the past week was weak and a shade lower on all grades.

	Beef Cattle	Sheep and Lambs	Hogs
Total for week	3,845	10,610	1,180
Previous week	3,167	10,001	5,325
Beef steers			$8.50@8.60
Choice steers			8.47½@8.50
Good			8.00@8.25
Medium steers			7.75@8.00
Common steers			7.25@7.50
Bulls			6.50@7.25
Fat cows			4.50@6.50
Thin cows			3.00@3.75
Milk cows			40.00@65.00

Veal calves steady.

Best calves	$10.00@10.50
Good to choice do.	9.25@9.75
Medium	7.00@8.00
Common do.	6.50@7.00
Thin do.	5.00@8.00

Sheep and lambs are steady.

Extra wethers	$7.00@7.50
Choice wethers	6.50@7.00
Good wethers	6.00@6.50
Common to medium	3.00@5.50
Ewes, fat	6.00@6.50
Extra lambs	9.50@9.75
Good to choice do.	9.25@9.50
Common to medium	6.00@8.50

The hog market continued steady thruout the week at $12.00@12.25.

City dressed Stock.—Choice classes of dressed meats are steady. Trade is normal. Steers, 13@14c; heifers, 10@13c; cows, 8@11½c. Veal calves, 14@16c; country dressed calves, 14@15c; extra do., 15½c. Sheep, 11@13c; extra wethers, 14c. Spring lambs, 16@18c. Hogs, 12¼@12½c.

PITTSBURGH LIVE STOCK

Pittsburgh, Pa., May 5, 1913.

While supplies were not heavy last week, the market ruled 10 to 25 cents lower, particularly on medium and weighty grades; light cattle were about steady. There were 85 loads on sale today. With a fair demand, the market ruled slow and steady.

Good to choice	$8.35@8.60
Good, 1300 to 1400 lb.	8.25@8.35
Medium to good, 1200-1300 lb.	8.25@8.40
Tidy, 1050-1150 lb.	8.10@8.25
Fair to medium, 900-1100 lb.	7.75@8.00
Common to good fat oxen	5.00@7.00
Common, 700-900 lb.	6.00@7.25
Common to good fat bulls	5.00@8.00
Common to good fat cows	4.75@7.25
Heifers, 700 to 900 lbs.	5.50@8.00
Bologna cows	4.00@4.40
Fresh cows and springers	20.00@80.00

Veal calves are 50 cents per cwt. higher. Today's receipts were 800 head.

Heavy and thin calves	$4.50@6.50
Veal calves	7.00@9.50

The supply of hogs was good all last week. The market closed at about 10 cents lower than the first of the week. There were 50 double-deck loads on sale today, and prices went 5c lower.

Prime heavy	$8.55@
Prime medium weights	8.70@
Heavy mixed	8.60@
Best heavy Yorkers	8.70@
Light Yorkers	8.75@
Pigs as to quality	8.70@8.75
Common to good roughs	7.50@8.00
Stags	6.50@7.00

Sheep and lambs have been in fair demand for best grades; others lower. Spring lambs are a shade stronger. There were 25 double-deck loads on sale today. Choice grades were steady; others slow and lower.

Prime wethers, clipped	$5.85@6.00
Good mixed	5.50@5.75
Fair mixed ewes and wethers	4.50@5.25
Culls and commons	2.50@4.00
Spring lambs	7.00@10.00
Culls to choice lambs	4.00@8.15

BUFFALO LIVE STOCK

Buffalo, N. Y., May 5, 1913.

Cattle receipts today were 130 cars. Receipts were liberal all last week and the market was quiet for choice butcher cattle.

Choice heavy steers	$8.00@8.50
Medium	8.00@8.40
Yearlings	8.50@8.75
Plain heavy	7.75@8.00
Handy butchers	6.75@8.60
Good to choice fat cows	6.00@7.25
Good to choice heifers	7.25@8.10
Butcher bulls	7.00@7.50
Feeders	6.00@7.75
Stockers	4.75@6.25
Cows and springers	40.00@85.00

The calf market was firm all last week and prices remained firm. With 2,000 head on sale the market showed further decline.

Choice veals	$9.00@9.50
Light and thin	4.00@6.50

Sheep and lambs were steady last week under a liberal supply. Today's receipts were heavy. The market was lower. Clipped lambs are in good demand.

Clipped lambs	$8.00@8.25
Poorer grades	6.00@6.50
Yearlings	7.00@7.50
Wethers	6.25@6.40
Ewes	5.25@5.75
Sheep	6.00@6.25

Hogs of all grades sold easier thruout all of last week. Prices were a little lower generally. With 110 cars on sale today prices went still lower.

Heavies	$8.50@8.60
Mixed and medium	8.40@8.50
Yorkers	8.55@8.60
Light Yorkers	8.55@8.60
Pigs	8.55@8.60
Roughs	7.50@7.70
Stags	6.50@7.50

NEW YORK LIVE STOCK

New York City, May 5, 1913.

Cattle receipts for the week were 3,287 head. The market is irregular.

Steers	$6.15@8.85
Bulls	5.50@7.75
Cows	3.50@6.75

Dressed beef weak. Native sides 11½@13c.

Calf receipts were 8,658 head. The market is 25c lower.

Choice veals	$7.00@10.25
Good veals	6.00@7.50
Culls	6.00@6.50

Dressed calves are steady.

City dressed veals	13@15½c
Country dressed veals	11@14c

Sheep and lamb receipts were 8,659 head. The market is irregular.

Wooled sheep	$5.00@6.90
Clipped sheep	4.00@6.30
Unshorn lambs	7.25@9.25
Clipped lambs	6.50@8.40
Spring lambs	8.00@10.50

Hog receipts were 10,322 head. The market is lower at $8.75@9.00.

BALTIMORE LIVE STOCK

Baltimore, Md., May 5, 1913.

Beef receipts for the week were 1,510 head. The market is steady.

Steers	$7.00@8.40
Heifers	5.00@7.50
Cows	3.50@6.25
Bulls	6.00@7.25
Fresh cows	27.50@77.50

Sheep and lamb receipts were 2,714 head. Under a fair supply the market is slow.

Sheep	$2.50@6.00
Lambs	6.00@9.30
Spring lambs	4.90@10.50

There were 8,682 hogs on sale during the week. Under a liberal supply the market is lower.

Light western	$9.00@
Heavy to medium	8.75@9.00
Near-by	8.80@8.90
Pigs	8.75@8.85
Roughs	7.00@8.25

Calf receipts for the week were 298 head. Most of the receipts were of unattractive stock, and under a light supply the market is lower at $5.50@10.00.

ELGIN BUTTER QUOTATION

Elgin, Ill., May 5, 1913.

The quotation committee of the Elgin Board of Trade this afternoon declared butter steady at 28c a pound.

NEW YORK MILK QUOTATION

The wholesale milk price is $1.61 per 10 quart can for class C; class B, $1.71.

PITTSBURGH HAY AND GRAIN

Pittsburgh, Pa., May 5, 1913.

While hay receipts are moderate, they are mostly of inferior stock, which is practically unsalable. No. 1 timothy is scarce and in strong demand. Hay receipts are light but fully equal to the demand. The market is slow. No. 1 timothy, $15.75@16.00; No. 2 do., $13.00@14.00; No. 3 do., $10.00@12.00; No. 1 light mixed, $13.00@13.50; No. 1 clover mixed, $13.00@13.50; No. 2 do., $9.00@10.00. No. 1 clover, $12.50@13.00; No. 2 do., $8.00@10.00. No. 3 prairie, $10.00@10.50, No. 4 do., $8.00@9.00; No. 1 oat straw, $8.50@9.00; No. 2 do., $8.00@8.50; No. 1 wheat, $8.50@9.00; No. 2 do., $8.00@8.50; No. 1 rye, $11.00@11.50; No. 2 do., $9.25@9.50. Ear corn arrivals are in strong demand. Market stronger. No. 2 yellow, 65@66c; No. 2 high mixed, 63@64c. Shelled corn receipts are in excess of the demand. No. 3 yellow natural, 61@61½c; sample, 59@60c. Oats are in fair demand and the market is weak. No. 2 white, 40@40½c; standard, 39@39½c; No. 3 do., 37@38c; No. 4 do., 35@36c. The demand for middlings is very slow. Market dull. No. 2 white mids., $23.50@24.00; No. 1 bran, coarse, $21.50@22.00; do., medium brown mids., $21.00@21.50. Winter wheat $20.50@21.00.

TOBACCO MARKET

It is now an assured fact that there will be considerable Havana Tobacco grown in the state the present year. Dissatisfied with prices, many growers hope to get better returns from this comparatively unknown variety. Havana commands much higher prices per pound, but the yield per acre is less, so there is some doubt as to the comparative profits, and there is a risk as to the quality of the new product. However, the small amounts which have been grown in past years are said to have been of fair average quality. It is estimated that 1,000 acres of this variety will be grown in the state.

Tobacco plants are now well up and growing rapidly these warm days. With a continuation of favorable conditions, transplanting will begin late in this month. Some localities report the presence of snails in beds, resulting in damage to the plants. Such beds may yet be sown over, but this precludes timely results. If taken at the proper time, these pests can be easily controlled by the use of a weak solution of paris green and water sprinkled over the beds at a time when plants are free from dew.

Less than 10 percent of the 1912 crop is yet in growers' hands and this is being gradually sold. The demand is better than heretofore and prices, while not quotably higher, stiffened during the week. The general tobacco market, as reported by New York authorities, is not at all good. Trading is slow and despite the prediction that flood conditions would improve the situation in the East, the same has not as yet been true.

The efforts of the Lancaster representative in Congress in behalf of agricultural interests is worthy of special attention. In a recent speech there, he very fittingly characterized the proposed tariff bill as "a drastic piece of legislation aimed at those who work in the fields, submitted to and sanctioned by the President and the Democratic caucus." In supporting his opposition to the measure, attention was called to the comparatively low prices of labor in foreign countries and the great increase in their exports in the United States which would result from the removal of the present duty. It is cited that Orientals live cheaply, with a low standard of life, making it possible for them to exist on a wage that would mean want to the American farmer and farm laborer.—H. E. Tweed, May 5, 1913.

Dressing Veal and Poultry.—Extension Bulletin 31 of the Minnesota Farmers' Library, at University Farm, St. Paul, Minn., contains a discussion of dressing and marketing veal and poultry. The age at which to slaughter, grades, handling previous to slaughter, dressing and shipping are given in detail, together with photographs illustrative of the description. This bulletin is valuable to all farmers raising veal or poultry.

Lime and Sulfur for Potatoes. The question of the possibility of substituting lime and sulfur for other fungicides as a potato spray has long been discussed. The New York Experiment Station, at Geneva, N. Y., has made valuable tests on this point which are summarized in Bulletin 352. The conclusion drawn from these investigations are that lime and sulfur can never replace bordeaux mixture as a preventative for potato diseases. Lime and sulfur caused dwarfing of the plants, apparently increased tip burn, did not check late blight and rot and resulted in decreased yields.

Veterinary

(Conducted by W. C. Fair, V. S.)

(Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also name and address of writer. Initials only will be published. When reply by mail is requested, it becomes private practice, and a fee of $1 must accompany the letter. This is one of the most valuable columns of the paper and we invite readers to make use of it. Clippings from this column, when properly preserved and classified, would make one of the most valuable medical symposiums a farmer-stockman could obtain.)

Mange.—I have a horse that is itchy from head to foot. His skin is dry and scaly; he rubs and bites himself whenever he gets a chance. What would cure him? J. F. C., White Oak, Pa.—Give your horse ½ oz. Donovan's solution of arsenic at a dose in feed, 3 times a day. Clip him and apply 1 part sulfur, ½ part of carbonate of potash and 4 parts fresh lard to itchy parts of body, once a day. Also apply 1 part bichloride mercury and 1,000 parts water after using the other ointment 10 days or two weeks. Or apply 1 part chinosol and 250 parts water. He should be thoroly washed with soft soap and water, twice a week.

Grub in the Head.—Our sheep seem to have what is called grub in the head or something similar to that. They lose control of their limbs, will not eat and only live a day or two. These sheep seem to be in good condition and their heads seem to be the only part of body that is affected. What can be done for them? O. H. F., Mercer, Pa.—The grub in the head of sheep is the larva of a small gad-fly, which deposits its live embryo on the margin of the nostrils; it passes up the nasal cavities into the sinuses and nests, just below the eyes. During July, August and September these gad-flies bother sheep most. If sheep were allowed to run on a plowed field they could then rub their nose, and often times prevent having grub in the head. You had better blow some Scotch snuff into the nose, twice a day, or burn some red pepper to cause sneezing, and perhaps this will dislodge most of the grubs. Grubs are usually passed out of the head soon as warm weather sets in. In my practice I frequently find it necessary to trephine thru the bones of the face between the eyes and median line of the face or just in front of the horn, if the sheep has horns. Then wash out grubs with a weak salt solution. Sheep that have grubs in the head should be well fed and treated in time.

Eczema.—We have a horse that is inclined to rub himself whenever he has a chance, and this itchy condition of skin must extend pretty near over the whole body. He likes to be curried, and when I am cleaning him he leans over as if it felt good. He also has scratches on one hind leg and discharges mucus from both nostrils. Do you think he has a cold, or is it distemper? We do not know much about horses, and would appreciate any information you give us. J. F. M., Birdsboro, Pa.—Clip your horse, wash him with soap and water, twice a week; also apply 1 part chinosol and 250 parts water, twice a day for a week; then apply 1 part bichloride mercury and 500 parts water, twice a day, alternating these two remedies every week. Give him ½ oz. Donovan's solution at a dose, 3 times a day. The same medicine should be applied to heels. I am inclined to believe that he has taken cold and will soon get well of his catarrh.

Scurvy.—I have some young cattle, yearlings and two-year-olds, that have scurvy. The hair sheds out and the skin becomes rough. One of these older ones had warts on last summer, but they have all disappeared. This scurvy or roughness is most apt to be around the eyes, on eye lids and in some cases near root of tail where the hair is short. One has blotches on inside of hind legs and back part of udder. On parts of body this scurf is light grey in color, raised up in places, and when rough skin is picked off, skin looks red and raw. These cattle have been tied up in stanchions at night and run loose thru the day, fed on ensilage and timothy hay. I dehorned the older ones about a month ago and one of them had very sore eyes, but her eyes are all right now. T. E. M., Rea, Pa.—Mix 1 part coal tar disinfectant and 5 parts vaseline and apply to itchy and sore parts of body, once a day. Give each of your cattle 1 oz. of bicarbonate of soda and a teaspoonful of salt at a dose in feed, 2 or 3 times a day.

COUNTY NOTES

Potter Co., Pa. (N. C.), April 14.—Having plenty of rain. Some of the winter rye and wheat is looking fine. Horses are scarce and high; also cattle. Veal, 12c, dressed; apples, 50c bu.; potatoes, 50c bu.; eggs, 20c doz.; butter, 35c lb. Some plowing is being done. The roads are worked now, so wheeling is heavy.—Louis J. Zundel.

Wicomico Co., Md. (S. E.), April 20.—Weather holding cold; some frosts. Prices are a little lower. Stock in good condition. Corn, 60c; live fowls, 16c lb.; eggs, 16c doz.; butter, 30c lb.; potatoes, 50c bu. Work well ahead. Cantaloupes, cucumbers and some watermelons planted. Clover and wheat is going to be short.—W. R. Strong.

McKean Co., Pa. (N. C.), April 19.—Warm with local showers. Stock in good condition. Beef still increasing in price. Veal, 12c, wholesale; hogs, 9c to 11c; beef, 9c and 10c per side. Ground is nearly ready for oats. A few dry days will set a good pace for spring. Wet weather has kept work back some, but willing hearts and strong hands will soon arrange matters.—M. Ingalsby.

Montgomery Co., Md. (C.), April 18.—Extremely wet and disagreeable. Live stock selling well. Corn, $3.75 bbl.; wheat, $1.02 bu.; eggs, 18c doz.; potatoes, 80c bu. Meat of all kinds rather higher than in the past. Farm work and general conditions generally behind, due to rains. No spring plowing done. Few gardens planted as yet.—Prof. S. D. Gray.

Sullivan Co., Pa. (N. C.), April 19.—Fair and cool, with indications of frost. Live stock in fair condition but scarce. Horses are selling at high prices. Pigs are selling at $6 per pair. Winter grain looks good. There is fear that the fruit will be killed by frost. Butter, 30c; eggs, 16c. Farmers are busy plowing for oats; scarcely any sowed yet. Roads are quite rough, having just been worked. Colby Grange is thriving.—Geo. G. Junk.

Juniata Co., Pa. (C.), April 22.—Cool and dry. Frost on 20th and 21st. Stock in good condition. Winter wheat and grass very fine. Cherries killed and other fruit injured by yesterday's freeze. Wheat, $1; corn, 70c; oats, 40c; butter, 38c; eggs, 16c; beef cattle, 6c to 7c; chickens, 60c to 80c each. Oats sowing half done. Plowing for corn well forward. Health good. Farm labor scarce and wages high.

Fayette Co., Pa. (S. W.), April 21.—Fair and cool; heavy frosts. Live stock in good demand, but supply is limited. No stock cattle for sale. Horses $150 to $300; scarce at that. Hogs high and scarce. Pigs selling for $8 to $10 per pair. Farm work being rushed. Most of plowing done. Most of oats sowed. Some gardens made. Winter wheat looking fairly good. Some froze out during open winter.—Samuel A. Harris.

Green Co., Pa. (S. W.), April 21.—Weather cool; hard freezes April 20 and 21. Live stock scarce; pigs $5 to $6 pair at weaning; sheep from $2 to $6 per head; cows, $60 to $90; eggs, 18c doz.; butter, 35c lb.; oats, 40c; wheat, $1.10; corn, 60c. Some oats sowed, but still some ground to be plowed. Very few potatoes planted. Fruit outlook is not promising since recent freezes.—C. E. Addleman.

Frederick Co., Md. (N. C.), April 25.—Warm and no rain for a week. Some live stock on pasture. Still plenty of long feed; stock in good condition and very high in price. Wheat looking good. Pasture not so good; 80 percent of young clover disappeared during winter. Some little corn planted. Lots of ground ready to plant. A lot of fruit, or nearly all in some places, frozen by last freeze. We think the apples not hurt.—H. C. Fawley.

Charles Co., Md. (S. C.), April 26.—This county lies on the Potomac River, 50 miles south of Washington, D. C. It is strictly an agricultural section needing settlers. Lands are of fine quality of soil, a great deal of which has been badly farmed in years back, but with improved methods and good implements there is a decided improvement in condition of the farms. Corn is selling at 70c to 80c bu.; potatoes, 60c to 70c; seed potatoes, $1; eggs, 16c; butter, 25c; veals, high and scarce. Some few shipping cream to Washington at satisfactory prices. Farmers generally thru plowing for corn. Some planting. Wheat and grass looking well. Stock in good condition. Many peaches injured by late frost and cold; less than half crop. Apples and pears seem to be safe.—Robert Marbury.

Union Co., Pa. (C.), April 28.—Weather was fair till Sunday; now rainy. Live stock scarce and high. Horses as high as $600 pair; cows, $40@100; 6 weeks-old pigs, $4 to $5 each. Crops all look fine. Wheat, $1; corn, 50c; oats, 40c; rye, 62c. Poultry scarce and high. Live stock looks fine. Farm work is rushed. Oats all sowed. Corn ground about half plowed. Soil plows very hard. Fruit trees all in full bloom.—H. Lee Herman.

BOOK NOTICES

Agronomy, Practical Gardening for High Schools, by Willard N. Clute. Bound in cloth; 5½ x 7½ inches; 296 pages, fully illustrated. Published by Ginn & Co., Boston, Mass. Price, $1.

This is a book designed especially for high school students in cities and towns, giving a thoro grounding in the principles underlying propagation, cultivation, and improvement of plants which can be used in garden and lawn work, and to serve further as fundamental to more extensive agricultural training in case the student wants to take it up. The book has chapters on origin and composition of soils, effects of heat light and moisture on plants, planting, tillage, weeds, propagation, decorative planting, pruning, plant diseases, insect pests, plant breeding, etc. All the exercises outlined may be performed in the ordinary high school and do not require expensive equipment. The book should prove of value to all high schools now taking up this work, and particularly valuable to schools in cities and small towns.

Manual of Practical Farming, by John McLennan, Ph. M., Superintendent of Farms at New York State School of Agriculture, Alfred, N. Y. Cloth bound; 5 x 7½ inches; 298 pages; fully illustrated. Published by The Macmillan Company, 66 Fifth Ave., New York City. Price, 50 cents.

This book should appeal to the practical farmer and student of farming. It is a plain discussion of the every-day work of the farm in the light of established scientific facts. The subject matter is admirably arranged as a finished discussion, but each chapter is complete in its treatment of specific subjects. The book is divided into two parts, the first dealing with the soil and its treatment in general farming and with general farm crops; the second with animal husbandry, including all classes of farm animals. The farmer who wants the results of scientific research as applied to the common things in agriculture will find them in this book stated in simple language and arranged for ready reference.

Plants and Their Uses, by Frederick Leroy Sargent, former instructor in botany in the University of Wisconsin. Cloth bound; 5 x 7½ inches; 610 pages; profusely illustrated. Published by Henry Holt & Co., New York. Price, $1.25.

Plants and Their Uses is designed as an introduction to botany, but it is more; it is an introduction to the entire subject of agriculture thru the study of plants. It is intended for rural or high school use, and teaches thru what may be called the historical method; that is, it starts with the plants familiar to all and traces their economic uses, and thus leads to classification and scientific study of all economic plants. This book has chapters on plants generally, cereals, food plants, flavoring and beverage plants, medicinal and poisonous plants, industrial plants, followed by the strictly botanical studies, as classification, life histories, etc. For school work and for the study of botany from a practical, economic standpoint, this is the best book we have ever seen.

How to Grow Vegetables, by Allen French. Cloth bound; 5 x 7½ inches; 312 pages; fully illustrated. Published by The Macmillan Company, 66 Fifth Ave., New York City. Price, 50 cents.

This is a new edition of the book previously published under the title "The Book of Vegetables." It is a valuable compilation of the latest information on vegetable planting, designed to be of particular assistance to those who have to do with vegetable seeds. The vegetables are discussed in alphabetical order, and the subject matter is well condensed to make the book a handy reference and practical guide.

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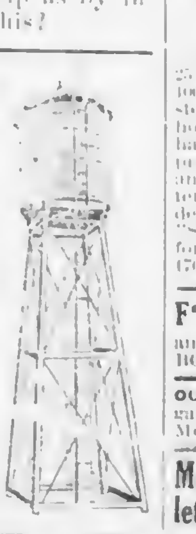

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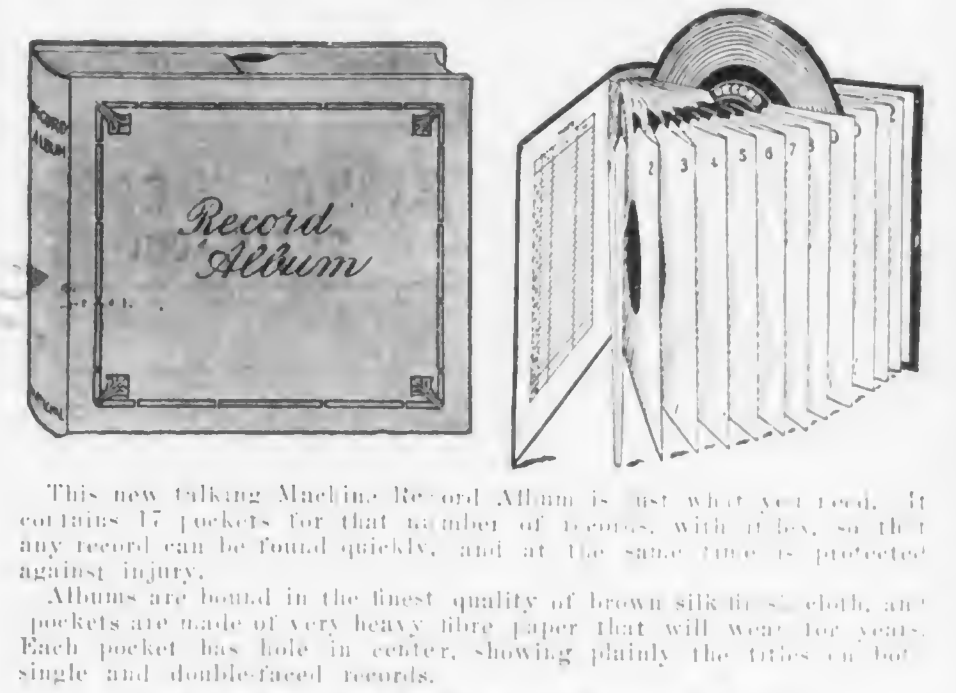

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NOTES AND BULLETINS

Professor Van Norman Busy in California.—That Professor Van Norman is producing results in California in his characteristic way is evidenced by the following news item: "The College of Agriculture of the University of California has just completed a three weeks' tour of a demonstration train, reaching 14,725 people. Efforts were concentrated on the dairy industry. An insufficient supply of good cows was evident in every county visited. Production of dairy products is not keeping up with demand."

Cutaway Harrow in Quack Grass.—Attention has lately been called to the efficiency of the Cutaway Harrow in killing quack grass, sometimes known as witch grass, couch grass, twitch grass, etc. This grass is one of the worst of our common weed pests, growing from underground root stems, and particularly hard to eradicate. The Cutaway Harrow is especially fitted for cutting into the soil and tearing these underground stems apart and throwing them upon the surface, where they are killed by the air and sun. A descriptive catalog, profusely illustrated and telling of the many uses of this all-round farm implement, will be sent free upon postal card request addressed to the Cutaway Harrow Co., 983 Main St., Higganum, Conn.

Arbor Day Manual.—The Pennsylvania Arbor Day Manual, compiled and issued by Nathan C. Schaeffer, State Superintendent of Public Instruction, is a splendid publication for the use of the public schools. While it was designed especially for use of teachers in preparing for Arbor Day celebrations, it contains a large amount of valuable material which may be used thruout the year in the study of trees and forestry work. It contains 182 pages, is profusely illustrated with handsome halftone engravings, and is full of well-selected material for Arbor Day observance. In addition to selections and material for programs, the booklet contains articles on planting trees, use of shrubs and vines, pruning, results of forest fires and Chestnut tree blight.

The Volatile Acids of Corn Silage.—A recent bulletin issued by the Iowa Experiment Station, Ames, Iowa, gives results in determining the various volatile aliphatic acids in corn silage. It was found that acetic acid is first in importance, comprising nine-tenths of all the acids present in most silage. Propionic acid is invariably present. Butyric acid is not found in any considerable quantity, but when present can often be detected by its odor. Formic acid is found in small amounts in most samples. Spoiled silage was found to contain practically no volatile acid.

Commercial Woods.—The Connecticut Experiment Station, at New Haven, in Bulletin 171, has published information of value to all wood workers. The commercial woods are well described, giving their characteristics and economic uses. Tables are also presented showing the relative quantities of various woods used by commerce in the state of Connecticut.

Germination Tests in Corn.—The Iowa Experiment Station has made thoro and extensive investigations in the germination of seed corn. They have demonstrated, by averages of some 45,000 ear tests, that a careful germination test gives a true indication of the comparative yielding power of individual ears of corn. It was found that by testing the vitality of the seed before planting the profits per acre were increased 93.6 percent in 1910 and 85.7 percent in 1911, or an increase of 19.6 bushels in 1910 and 10.1 in 1911. A comparison of home-made and commercial testers was made, and it was found that inexpensive, home-made testers give as accurate results as more elaborate ones. The cost of testing 100 ears for germination varied from 15.6 to 45.3 cents, depending upon the method used. Seed ears which made the most rapid early growth in the field, gave decidedly the best yields. When in the field, horny kernels made a much more rapid early growth than did more starchy ones. Also kernels in which the germ appeared large made a somewhat more rapid growth than did those with smaller germs. An increase in yield is in no way proportioned to an increased stand, altho there is a marked relation between the two. These and other interesting facts relative to seed germination may be found in Bulletin 135 of the Iowa Experiment Station, Ames, Iowa.

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By R. E. Olds, Designer

Here are some things which you should look for in a 1913 car. A car without them lacks things you should have.

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The leading cars of this year have the left-side drive. They have electric dash lights—set-in lights—not the old projecting lamps.

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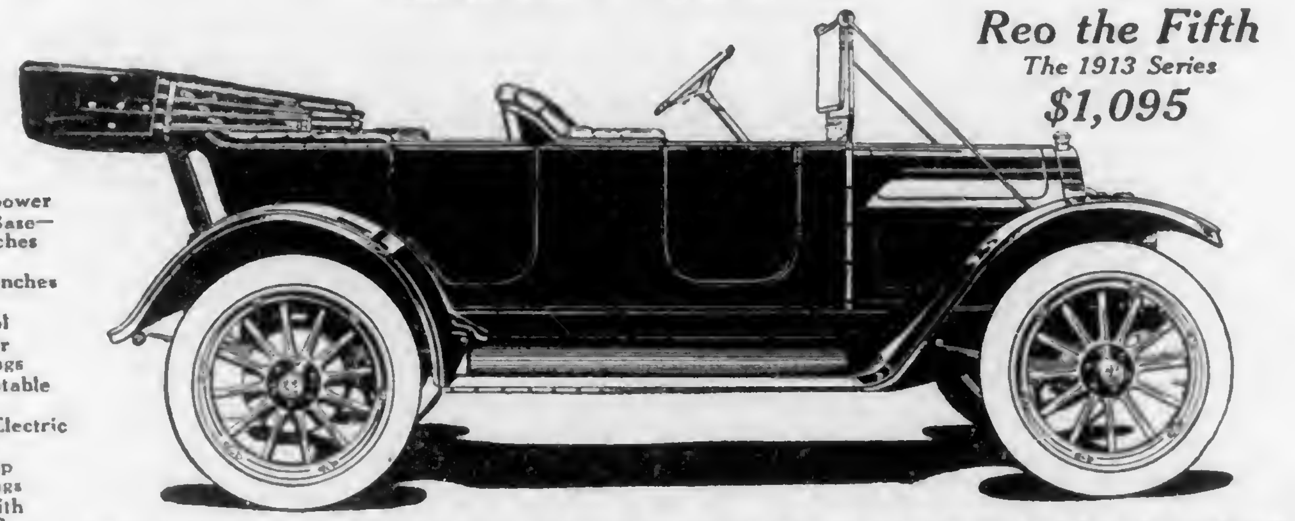

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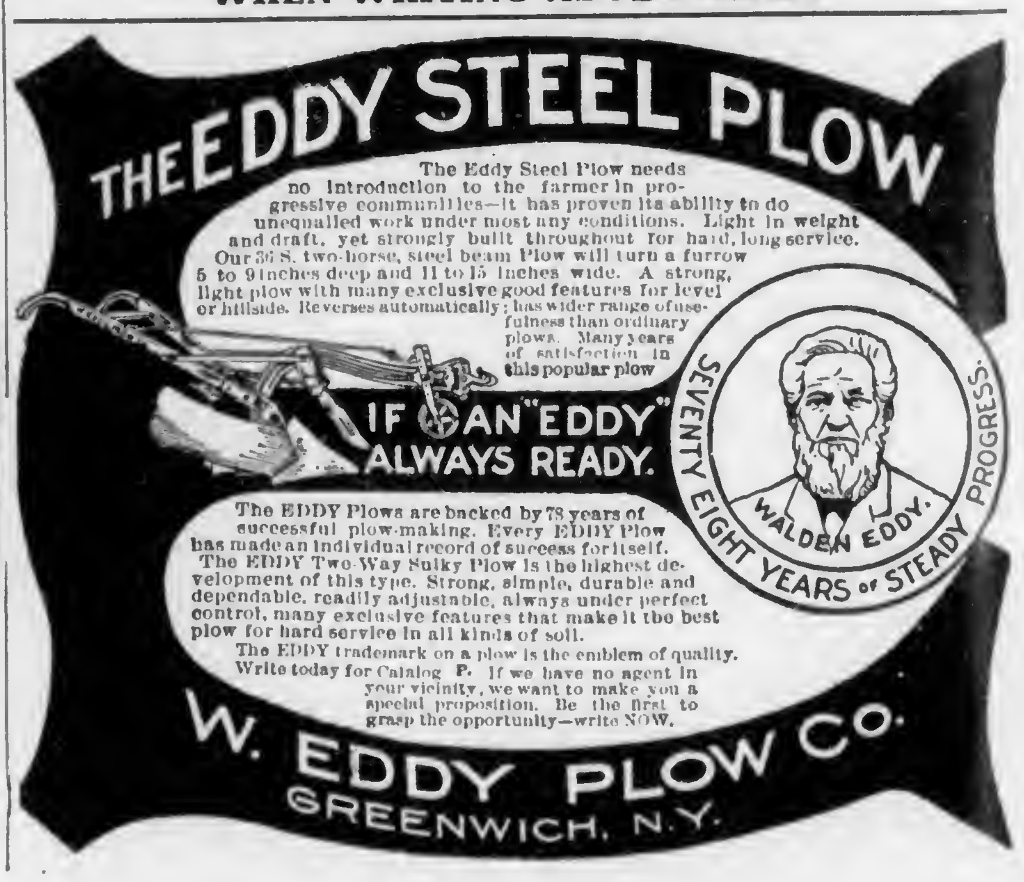

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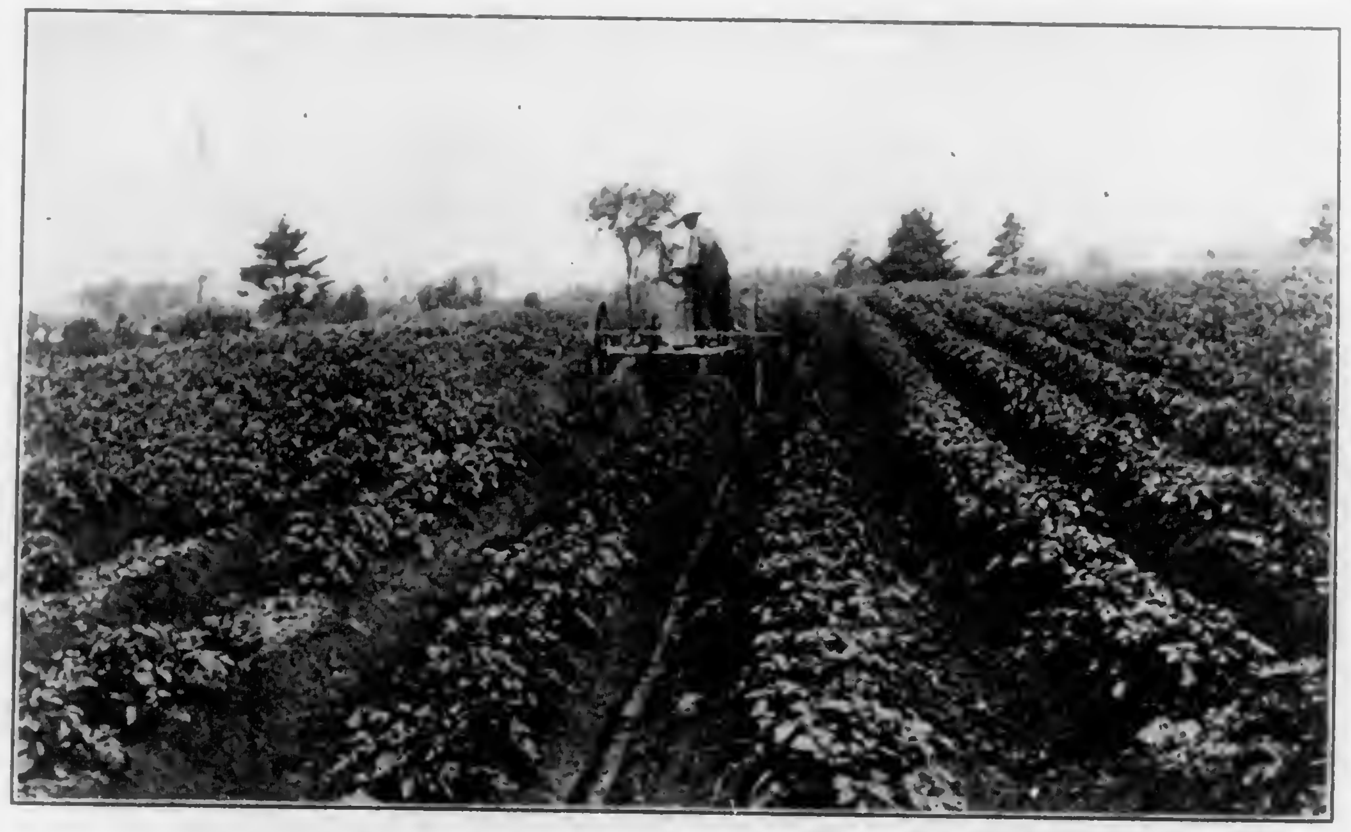
Headle Dr. J. G.
Rutgers College

New Thoughts in Potato Growing

By Dr. G. M. Twitchell, Maine.

Successful potato growing rests upon certain fixed principles, not one of which can be neglected. The only path for the grower to follow is that wherein he prepares to meet and overcome every pest, disease and obstacle. It is the maximum crop alone which pays. It costs $90 to $95 to grow an acre of potatoes. The trouble has been we have counted only seed, fertilizer, spraying and labor, but these are only a part of the expense. Interest, depreciation of implements, taxes, insurance of buildings, all bear a direct and important relation to cost per bushel. Boys leave the farm because they do not find the business end satisfactory, and they never will until the spur of actual cost forces attention to every item which, rightly observed, may increase output. A man figures cost at $60 per acre and therefore is content with 200 bushels yield, as "they cost only 3[illegible] cents per bushel, while I can always sell for 45 to [illegible] or more." Meanwhile he is finding year by year that his buildings are getting shabby, his implements wearing out, and his visible net assets growing less. Naturally he blames the industry and his boys leave the farm.



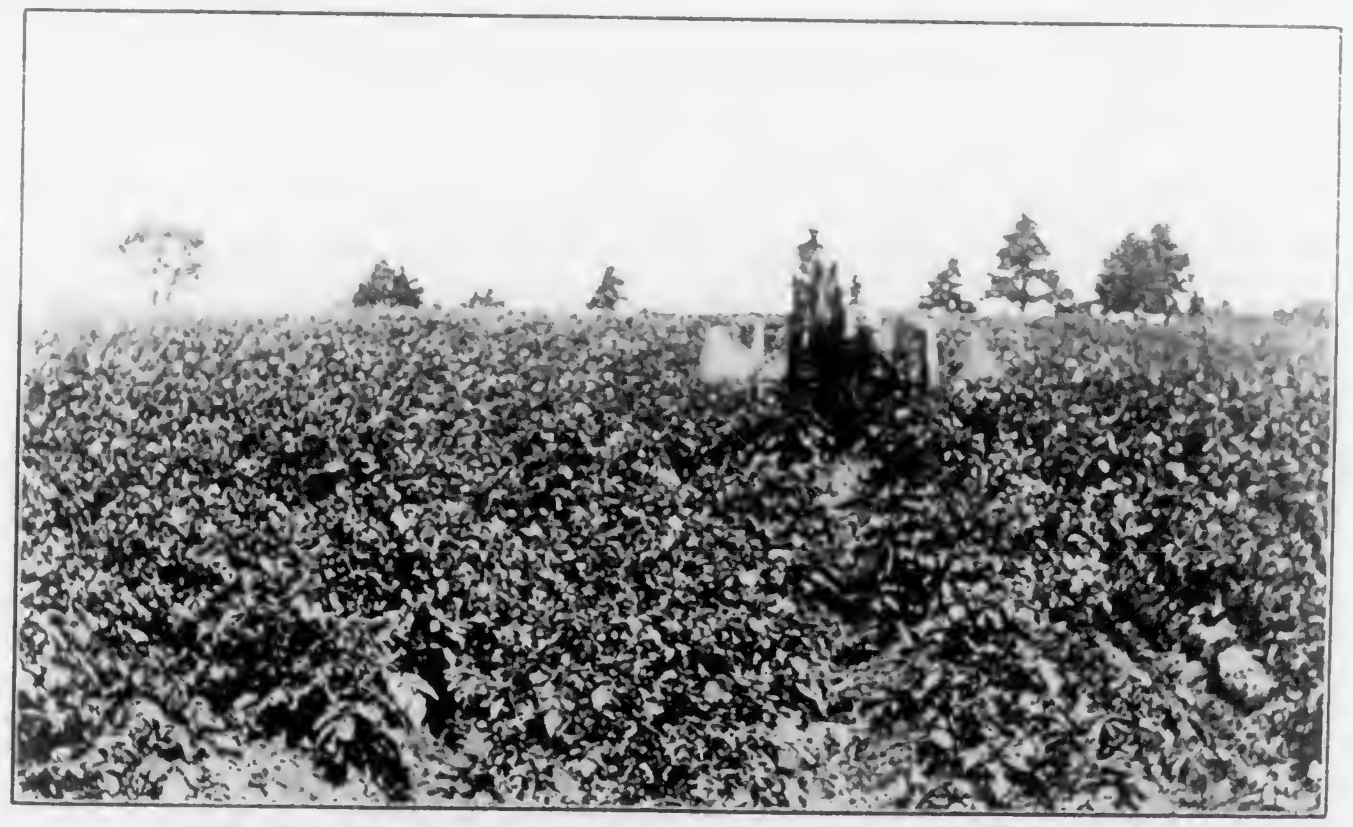
THE FIRST SPRAYING ON A POTATO CROP PLANTED MAY 27, 1912.

The greatest impetus in seeking maximum yield is full appreciation of cost of production. If there be any secret in successful potato growing it centers in most rapid growth from the fifth to the eighth week. The two illustrations indicate what is here intended. No. 1 represents the field, planted May 27th, at the first spraying, July 8th, and No. 2 the same field 10 days later—July 18th. Resistance to insect pests and fungus diseases will always be in large measure met by vigor and virility of stalk and leaf, even if these do not insure protection, and still make necessary the use of the spray pump.

We shall never raise 300 bushels of potatoes per acre, the minimum consistent with good culture, without thoro and complete preparation of the land. I like to plow in August and work the land frequently until freezing time, then cross plow in early spring and harrow, not a certain number of times, but until every ounce is pulverized at least seven inches down. Planting four inches deep there should be at least three inches of thoroly worked soil under the seed. Men have not yet learned that they can not grow a peck of potatoes in a two-quart hill. I want seed which has been selected for type and resistant power, not in the bin, but for years in the field. As an instance, the Early Rose seed I shall use this year has been grown on one farm, without change, for 42 years, and seed of finer quality, or carrying a higher percent of starch, can not be found.

We grow thirty to forty million bushels yearly in Maine and have met in the past tremendous loss not so much from small, undersized potatoes, as from overgrown specimens. The problem has been how to unify the product upon a basis satisfactory to the buyer and eliminate the overgrown and undersized, to increase revenue per acre. This has been accomplished by reducing the space between the rows from 36 to 32 inches, and between the pieces in the rows, from 14 to 9 inches. This increases the seed required from 12 to 16 or 17 bushels per acre, but experience is showing that a more uniform product results and the percent of merchantable potatoes is increased.

Relying, as the grower should, upon chemicals, or mixed fertilizers, the problem of cost necessarily forces a study of the elements and percentages. We have found that barn manure is worth as much elsewhere, and that its use on the potato field increases the danger of scab and other diseases. On ground in fairly good condition it may be questioned whether or not it is most profitable to apply nitrate of soda at planting time. We boast sometimes of our knowledge, but there's so much about this problem we don't know it will be well to be humble. One ton to the acre is the general rule on old land—one half broadcast at the last harrowing, one quarter in the planter, and the remainder broadcast just as the tops break ground. No man can afford to have his potato roots searching for food. It may not require a ton to grow 300 bushels of potatoes, but much less will fail to do the work desired because the supply in, thru and about the hill is not abundant. Plants want abundance of nitrogen after they reach the sunlight, not before, at least not in form quickly available; hence tankage, dried blood, etc., may perhaps furnish the supply at planting time and hold it for use later as required, but the application made after the leaves appear should carry at least 4 percent of nitrogen, chiefly in the form of nitrate of soda. This is going on to the surface to be at once thrown up by the hiller about the plant, and we want its best service right away. Feed the plant and it will feed you, but unfortunately one can not force any and every kind of food, but must feed



THE SECOND SPRAYING IN THE SAME FIELD TEN DAYS LATER.
Note the Rapid and Uniform Growth.

MUTILATED PAGE

just what the plant wants today. Here is the science of fertilizing, and it has not yet been mastered. Here also is the economy of fertilizing.

Sometime, brother farmers, if we are watchful and patient we will, out of our experience, come to a better knowledge of principles and practices in this great and, at the present time, wasteful field. Until then we must use liberally if liberal returns are expected.

Plants breathe thru their leaves, therefore complete preservation is absolutely necessary if vigorous, healthy tubers are forthcoming. The crude part of a potato, the water and mineral matter, can be accounted for, but that elusive element so necessary, the starch, waits a cordial invitation. If, as we believe, this is dependent upon the elaboration of the sap in the leaves, how necessary that first of all we put size, strength and energy into the leaf system and then that the life of every leaf be conserved. We want 300 bushels or more per acre, we want 80 to 85 percent to grade right for the market—between 5 and 12 ounces—and, most of all, we want at least 16 percent of starch. Open, porous soil kept free from weeds, stirred every five to seven days, and abundance of plant food easily available, will insure that rapid growth of stout, strong stalks and that abundant development of large, deep-colored leaves which alone can make this yield possible. One of the difficult problems, after the stalks are six to eight inches high, is to protect in their purity and completeness. Yet this must be done if yield is to be forthcoming.

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How can I make my investment give me larger returns this year than it gave me in 1912? This is the question which every successful business man tries to answer each year. Now, the farmer is running a business. He is in every sense a business man. The man in business must answer the question of greater profits by saying, "I will put in more efficient machines, or I will simplify the process of manufacturing the article, or I will eliminate the little daily wastes." Only a careful business man or a successful farmer realizes how much a little saving every day will amount to in a year. The business man, in particular, has learned this lesson because of the fact that he handles a large amount of business.

A COMMON CASE OF MANURE WASTE.

One thing in which we farmers could make a neat saving every year is in the way we take care of the farm manure. Most of us have been told of this loss before, but in the rush seasons we were too busy to think of it, and at other times we let the matter slide and said that we guessed we were not losing much anyhow.

How much are we losing when we pile the manure out in the yard in the usual way, and spread it on the fields once a year? A little figuring ought to show us pretty nearly how we stand in this item of our business. Let us say that we have a 1,000-pound cow. The New Jersey and Pennsylvania Experiment Stations have found that a cow of this size will give off an average of 46 pounds of dung and 27 pounds of urine, or a total of over 70 pounds per day. This means over 12 tons per year, without including the bedding. The bedding, of course, should be included and this gives us a total of over 14 tons every year for each 1,000 pound cow that we keep. How much is this manure worth to the farmer? According to Roberts, the amount of plant food material contained in the liquid and solid manure per year of a cow kept under good conditions is: 171 pounds of nitrogen, 26 pounds of phosphoric acid and 108 pounds of potash. At the present prices of this plant food in commercial fertilizers, the manure given off by this cow in one year would be worth over $37.00.

Most of us are not getting this $37.00 worth of manure a year from each cow. This is because we do not handle the manure in the right way. The New Jersey Experiment Station found that when mixed dung and urine was exposed to ordinary leaching for 109 days it lost 51 percent of its nitrogen, 51.1 percent of its phosphoric acid, and 61 percent of its potash. In other words, in less than four months of exposure to ordinary weather, over one-half of the total value of the manure was lost. The total value of the manure we have found to be $37.00. Since we are losing half of this, we are losing on the manure of each cow $18.50 per year.

Suppose we have a dairy of 30 cows, or other stock equivalent to that number. Thirty times $18.50 gives us our total loss—$555 per year. Now suppose we had started in with dairy farming and had been in the business 30 years. In that time our loss at this rate would have been $16,650. Isn't that a sum worth saving? How long do you think it would take a business man in the city to get out pencil and paper and figure on his losses if someone told him he was losing $555 a year? Certainly the farmer can not afford to lose this money every year any more than his city cousin. Some will say that these figures are exaggerated and do not represent farm averages. But they represent farm possibilities and are worthy of investigation and correction

The way to avoid this loss of valuable material is a simple one. We have often been advised by the Pennsylvania Farmer that whenever practical we should haul the manure directly from the stable to the fields, and spread it. If we do this, all the plant food which leaches from the manure will be left in the soil where it can be used by the plants. This liquid fertilizer is too valuable to be left to soak in the soil around the barnyard, where it often feeds a vigorous crop of burdocks, ragweed smartweed and other plants which make our farms look unthrifty.

In the old type of dairy barn, with its board floor, the urine drained away and was lost under the barn floor. This urine contains more fertilizing value than most of us credit it with. For instance, in cow manure, more than one half of all the nitrogen is found in the liquid. Furthermore, the plant food in this liquid is more valuable, pound for pound, than the plant food in the solids, because it can be used more quickly by the growing crops. The only good, practical way for the American farmer to save this liquid manure is to have tight floors or tight gutters behind the cows and then use enough bedding to absorb it.

If we can not haul the manure directly to the fields, we can do the next best thing; that is, put it in a place where the losses will be as small as possible. If we are to keep manure without much loss we must provide for three things: (1) the manure must be kept compacted to keep out the air; (2) we must keep the manure moist, and (3) the manure must be protected from the leaching of the rain. Any farmer can provide against this expensive loss of plant food by fixing up a cheap and simple place for storing manure. If you are in the dairy business, where city health authorities use the score card for market milk, this manure pit or shed should be placed at least 100 feet from the dairy barn.

Build a shed with cement floor and cement walls about a foot high, so that there can be no leaching away. This pit should be covered with a cheap roof. When manure is dumped into it, it should be spread evenly over the pit. If we make three sides of the shed tight enough to prevent drafts, and leave the fourth side open, we have a shed in which steers can be fattened or other live stock may be turned for shelter and for exercise. Their tramping over the manure will compact, and this will prevention by keeping the air out. The mass will generally keep moist enough if there is much cow manure in the mixture. The cement floor with walls about a foot high, will prevent loss from leaching.

Every farmer who is in the business for dollars, as well as for pleasure, is going to think over this question of how he has been handling the farm manure If he has been losing money from this source, he is going to set to work, take care of the manure in a business-like way, and make 1913 a more prosperous year than was 1912.—W. L. K., Crawford Co., Pa.

BUCKWHEAT

The name buckwheat was derived from the German word buckweiser, or beech wheat—so named because the kernels are three-sided like beech nuts. The ordinary varieties cultivated in this part of the country belong to the species Fagopyrum esculentum, and are supposed to be natives of Siberia. The most popular variety with us is the silver hull, or gray, as it is sometimes called. A few years ago, the Japan was introduced into our locality. The kernels are black and considerably larger than any other variety, and it was hoped that it would prove a valuable acquisition, but it has not met with the favor expected. After several years' trial, most of our farmers have abandoned it and returned to the old varieties. It does not branch much, and the kernels are chiefly found in a close bunch on top of the main stalk. It sprouts more quickly than the other kinds when there come warm rains after it is ripe and cut. I have seen it sprouted before it was cut.

Farmers should not wait (as some do) for rain to moisten the soil, and make it plow easier, before plowing for buckwheat. With a good plow, sharp point and a strong team, the ground can be plowed when very dry. Altho more tiresome to man and team, and tho it turns up lumpy, a rain will moisten it so that it will harrow down mellow and retain the moisture longer than if not plowed until after the rain has fallen, and much of it has run off without soaking into the ground. I have had experience in this matter. The part of a buckwheat field plowed before the rain came up first after being sown, got a start of several inches' growth, maintained its start thru the growing season, was taller, with heavier straw, and was better filled when ripe than the land plowed after the rain. I could not have believed it, had I not seen it. Buckwheat when growing furnishes a deep shade and throws out an immense number of roots, which mellow the ground as no other plant can—not even clover. I have seen rye sown after buckwheat without plowing the stubble—only giving a good harrowing.

Buckwheat flour, as compared with wheat flour, is heavier, bulk for bulk, and has a sandy feeling when pressed between the fingers. Light bread can not be made from buckwheat flour, but with proper pains light butter cakes can always be had. It is a popular belief than when buckwheat cakes are largely used as an article of food, they produce a poisonous principle in the blood which manifests itself in eruptions on the skin, sometimes called "buckwheat itch," and because of this tendency of buckwheat cakes when eaten to excess, some doctors have condemned buckwheat as unfit for human food. However, it is not at all likely that their condemnation will ever be heeded by people who have once enjoyed eating buckwheat cakes well buttered and swimming in maple molasses or honey.—J. W. Ingham, Bradford Co., Pa.

Live Stock

SELECTION AND MANAGEMENT OF THE BROOD SOW

At the present value of pork and feed it is important that the farmer use more care in the selection and management of his brood sows if he expects to secure profitable returns. The sows used to breed pigs for the production of pork should be selected from the best animals in the herd, being as uniform in type as possible, and having the most desirable characteristics which will conform to economic pork production. Some of the most prominent of these characteristics are: A long body; width and depth of chest; smooth, broad and evenly fleshed shoulder; wide, straight, deep fleshed back; good spring-of-rib; deep, straight sides; large, well-rounded hams, and fairly short and strong legs. Another important essential is that she should come from a good mother that is prolific and a good milker.

Young sows should not be bred for the first time before they are eight months old. If in the pure-bred business, it is best not to breed her until she is at least 12 to 14 months old, then when she has her litter at 16 to 18 months of age, she will have a larger litter and will be larger and better developed herself. Good sows should be kept as long as they produce good litters and make satisfactory mothers.

A PROMISING BUNCH OF MORTGAGE LIFTERS.

During pregnancy a sow should be advancing in thrift and taking on flesh, but should not be allowed to become excessively fat. She should be kept exercising, for she will produce more vigorous offspring, her udder will develop better, she will have an easier time at farrowing and she will take better care of her pigs. She can be made to exercise in summer by turning her out on pasture, and in winter time by scattering her feed in the straw, or by having her living quarters at one end of the lot and the feeding ground at the other. Her bowels should be kept in good condition by feeding roots, kitchen slops, skim-milk and bran.

It takes 112 to 115 days from time of breeding for a sow to give birth to her young. About a week before farrowing she should be separated from the other pigs and put in a pen by herself As it comes close to farrowing time the breeder should become well acquainted with her and accustom her to being handled.

At farrowing have the house fairly warm and well ventilated. Watch [illegible] work, while the conical tins rusted out in one season, making their use rather expensive. So I cast about for some substitute and better way, finally devising a home-made collapsible pot made

For the first day after farrowing, the sow will need little feed. If she shows hunger give her a thin slop of bran or middlings and plenty of water. For the first few days give her a bulky feed, such as alfalfa feed and ground corn. After 10 days begin to concentrate the ration, giving her such foods as middlings, ground barley or ground peas with skim-milk, pasture or roots. After one month feed her about all she wants, and keep it up until weaning time, for it is more economical to produce gains in the small pigs indirectly thru the sow than later when feeding them directly. Feed the sow three times a day.

The little pigs may be weaned at 6 to 10 weeks of age. Teach them to eat first before weaning. A good feed is ground corn 5 parts, and middlings 5 parts, wet with skim-milk. Feed four times a day at first. When breeding the sow again, do it within two or three weeks from time of weaning, if two litters a year are to be raised. When two litters a year are raised the first litter should come in March and the second not later than September 10th.—Hugh Fergus, State College, Pa.

WARBLES OR BOTS IN CATTLE

One of the very harmful pests of live stock is the Ox Warble Fly. The source of irritation, and the punctures grubs in the backs of cattle are a which they produce seriously reduce the value of infested hides for leather products. The flesh around the wound is sometimes so changed by the inflammation set up by the grubs that it is unfit for sale and must be discarded. This causes substantial loss, especially as the more valuable cuts are most frequently affected.

Life History.—The adult Ox Warble Fly is half an inch long, very hairy and dark in color. During the summer the female deposits eggs upon the hairs of cattle, particularly on the legs just above the hoofs. The animal licks the hairs where these eggs are placed, and the larvae hatched from them are carried by the tongue into the mouth. The young maggots pass into the gullet and penetrate its walls. From the gullet they migrate to the back, where they may be found under the hide during the late winter and early spring months. Small lumps or swellings on the backs of cattle indicate the position of the grubs. Each swelling is perforated by a small hole, thru which the mature grub emerges from the warble cell in the spring and early summer. They then enter the pupal stage, in the ground or under rubbish. In from three to six weeks the adult fly escapes from the pupal case thru a circular opening in one end.

Prevention and Treatment.—Every farmer should make a thoro and systematic attempt to exterminate this pest. This may be accomplished by the destruction of all grubs during the early spring months. The grubs when ripe may be extracted by squeezing the warbles between the thumbs. All extracted grubs should be destroyed. The Ohio Experiment Station urges farmers to adopt the plan of removing the grubs from the backs of all infested cattle, and destroying them. This will reduce the number of adult flies, consequently fewer eggs will be laid to produce grubs the next season.

Prevalence.—As an example of the prevalence of the fly it may be mentioned that on one farm 91 grubs were taken from the back of a two-year-old heifer; most of the other cattle were more or less seriously infested. Various estimates have been made from time to time of the loss occasioned by the Ox Warble Fly, but there are no reliable data of recent date upon which a close estimate can be based.—Ohio Expt. Sta. Press Bulletin.

LUNG WORMS

Pneumonia of hogs is not always due to worms, yet it is not uncommon to find young pigs, and even old hogs, to be affected, and dying from inflammation of the lungs and bronchial tubes due to the presence of large numbers of small white to whitish-brown thread like worms which are found to be located in the bronchial tubes. This parasite is quite common in the United States.

Verminous pneumonia is most often found on low or swampy land, altho it may occur on the uplands. This disease of pigs occurs at all times of the year, but is more frequently observed during the late summer and early fall. When pigs are first affected the symptoms are few and elusive, but as the invasion by this worm progresses the symptoms become more and more pronounced. At this stage of development, frequent spells of coughing are noticed.

There is a thick discharge from the nostrils which will at times contain masses of mucous. A close examination of this material will at times reveal the presence of young worms as well as adult worms. The symptoms most apparent to the owner are thinness and lack of development of the pigs. Death is probably due to the air passages being closed or to a watery condition of the lungs.

At times this disease may be confused with hog cholera or even with tuberculosis of swine. By careful study of the symptoms and history, together with the finding of the worms either before death in the discharges from the nostrils, or after death in the bronchial tubes at the base of the lungs, should be sufficient evidence to enable one to be sure.

It is very difficult to relieve hogs affected with lung worms because of the danger of injuring the lungs or air passages in undertaking to kill or dislodge the worms. "An ounce of prevention is worth a pound of cure." Be very careful not to introduce into the herd any hogs that are affected by the parasite. If you know that any low or swampy ground on your farm has been used as pasture for infected hogs, keep healthy hogs away from it. This is not an absolute preventive, as the trouble sometimes occurs in uplands as well as lowlands.—Dr. W. L. Boyd, Minn. University.

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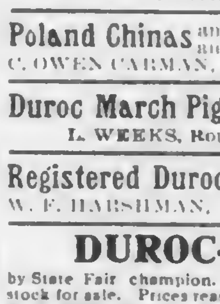

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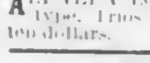

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A COMMON CASE OF MANURE WASTE.

One thing in which we farmers could make a neat saving every year is in the way we take care of the farm manure. Most of us have been told of this loss before, but in the rush seasons we were too busy to think of it, and at other times we let the matter slide and said that we guessed we were not losing much anyhow.

How much are we losing when we pile the manure out in the yard in the usual way, and spread it on the fields once a year? A little figuring ought to show us pretty nearly how we stand in this item of our business. Let us say that we have a 1,000-pound cow. The New Jersey and Pennsylvania Experiment Stations have found that a cow of this size will give off an average of 46 pounds of dung and 27 pounds of urine, or a total of over 70 pounds per day. This means over 12 tons per year, without including the bedding. The bedding, of course, should be included and this gives us a total of over 14 tons every year for each 1,000-pound cow that we keep. How much is this manure worth to the farmer? According to Roberts, the amount of plant food material contained in the liquid and solid manure per year of a cow kept under good conditions is: 171 pounds of nitrogen, 26 pounds of phosphoric acid and 108 pounds of potash. At the present prices of this plant food in commercial fertilizers, the manure given off by this cow in one year would be worth over $37.00.

Most of us are not getting this $37.00 worth of manure a year from each cow. This is because we do not handle the manure in the right way. The New Jersey Experiment Station found that when mixed dung and urine was exposed to ordinary leaching for 109 days it lost 51 percent of its nitrogen, 51.1 percent of its phosphoric acid, and 61 percent of its potash. In other words, in less than four months of exposure to ordinary weather, over one-half of the total value of the manure was lost. The total value of the manure we have found to be $37.00. Since we are losing half of this, we are losing on the manure of each cow $18.50 per year.

Suppose we have a dairy of 30 cows, or other stock equivalent to that number. Thirty times $18.50 gives us our total loss—$555 per year. Now suppose we had started in with dairy farming and had been in the business 30 years. In that time our loss at this rate would have been $16,650. Isn't that a sum worth saving? How long do you think it would take a business man in the city to get out pencil and paper and figure on his losses if someone told him he was losing $555 a year? Certainly the farmer can not afford to lose this money every year any more than his city cousin. Some will say that these figures are exaggerated and do not represent farm averages. But they represent farm possibilities and are worthy of investigation and correction

The way to avoid this loss of valuable material is a simple one. We have often been advised by the Pennsylvania Farmer that whenever practical we should haul the manure directly from the stable to the fields, and spread it. If we do this, all the plant food which leaches from the manure will be left in the soil where it can be used by the plants. This liquid fertilizer is too valuable to be left to soak in the soil around the barnyard, where it often feeds a vigorous crop of burdocks, ragweed smartweed and other plants which make our farms look unthrifty.

In the old type of dairy barn, with its board floor, the urine drained away and was lost under the barn floor. This urine contains more fertilizing value than most of us credit it with. For instance, in cow manure, more than one half of all the nitrogen is found in the liquid. Furthermore, the plant food in this liquid is more valuable, pound for pound, than the plant food in the solids, because it can be used more quickly by the growing crops. The only good, practical way for the American farmer to save this liquid manure is to have tight floors or tight gutters behind the cows and then use enough bedding to absorb it.

If we can not haul the manure directly to the fields, we can do the next best thing; that is, put it in a place where the losses will be as small as possible. If we are to keep manure without much loss we must provide for three things: (1) the manure must be kept compacted to keep out the air; (2) we must keep the manure moist, and (3) the manure must be protected from the leaching of the rain. Any farmer can provide against this expensive loss of plant food by fixing up a cheap and simple place for storing manure. If you are in the dairy business, where city health authorities use the score card for market milk, this manure pit or shed should be placed at least 100 feet from the dairy barn.

Build a shed with cement floor and cement walls about a foot high, so that there can be no leaching away. This pit should be covered with a cheap roof. When manure is dumped into it, it should be spread evenly over the pit. If we make three sides of the shed tight enough to prevent drafts, and leave the fourth side open, we have a shed in which steers can be fattened or other live stock may be turned for shelter and for exercise. Their tramping over the manure will compact, and this will prevent fermentation by keeping the air out. The mass will generally keep moist enough if there is much cow manure in the mixture. The cement floor with walls about a foot high, will prevent loss from leaching.

Every farmer who is in the business for dollars, as well as for pleasure, is going to think over this question of how he has been handling the farm manure. If he has been losing money from this source, he is going to set to work, take care of the manure in a business-like way, and make 1913 a more prosperous year than was 1912.—W. L. K., Crawford Co., Pa.

BUCKWHEAT

The name buckwheat was derived from the German word buckweiser, or beech wheat—so named because the kernels are three-sided like beech nuts. The ordinary varieties cultivated in this part of the country belong to the species Fagopyrum esculentum, and are supposed to be natives of Siberia. The most popular variety with us is the silver hull, or gray, as it is sometimes called. A few years ago, the Japan was introduced into our locality. The kernels are black and considerably larger than any other variety, and it was hoped that it would prove a valuable acquisition, but it has not met with the favor expected. After several years' trial, most of our farmers have abandoned it and returned to the old varieties. It does not branch much, and the kernels are chiefly found in a close bunch on top of the main stalk. It sprouts more quickly than the other kinds when there come warm rains after it is ripe and cut. I have seen it sprouted before it was cut.

Farmers should not wait (as some do) for rain to moisten the soil, and make it plow easier, before plowing for buckwheat. With a good plow, sharp point and a strong team, the ground can be plowed when very dry. Altho more tiresome to man and team, and tho it turns up lumpy, a rain will moisten it so that it will harrow down mellow and retain the moisture longer than if not plowed until after the rain has fallen, and much of it has run off without soaking into the ground. I have had experience in this matter. The part of a buckwheat field plowed before the rain came up first after being sown, got a start of several inches' growth, maintained its start thru the growing season, was taller, with heavier straw, and was better filled when ripe than the land plowed after the rain. I could not have believed it, had I not seen it. Buckwheat when growing furnishes a deep shade and throws out an immense number of roots, which mellow the ground as no other plant can—not even clover. I have seen rye sown after buckwheat without plowing the stubble—only giving a good harrowing.

Buckwheat flour, as compared with wheat flour, is heavier, bulk for bulk, and has a sandy feeling when pressed between the fingers. Light bread can not be made from buckwheat flour, but with proper pains light butter cakes can always be had. It is a popular belief than when buckwheat cakes are largely used as an article of food, they produce a poisonous principle in the blood which manifests itself in eruptions on the skin, sometimes called "buckwheat itch," and because of this tendency of buckwheat cakes when eaten to excess, some doctors have condemned buckwheat as unfit for human food. However, it is not at all likely that their condemnation will ever be heeded by people who have once enjoyed eating buckwheat cakes well buttered and swimming in maple molasses or honey.—J. W. Ingham, Bradford Co., Pa.

Live Stock

SELECTION AND MANAGEMENT OF THE BROOD SOW

At the present value of pork and feed it is important that the farmer use more care in the selection and management of his brood sows if he expects to secure profitable returns. The sows used to breed pigs for the production of pork should be selected from the best animals in the herd, being as uniform in type as possible, and having the most desirable characteristics which will conform to economic pork production. Some of the most prominent of these characteristics are: A long body; width and depth of chest; smooth, broad and evenly fleshed shoulder; wide, straight, deep fleshed back; good spring-of-rib; deep, straight sides; large, well-rounded hams, and fairly short and strong legs. Another important essential is that she should come from a good mother that is prolific and a good milker.

Young sows should not be bred for the first time before they are eight months old. If in the pure-bred business, it is best not to breed her until she is at least 12 to 14 months old, then when she has her litter at 16 to 18 months of age, she will have a larger litter and will be larger and better developed herself. Good sows should be kept as long as they produce good litters and make satisfactory mothers.

A PROMISING BUNCH OF MORTGAGE LIFTERS.

During pregnancy a sow should be advancing in thrift and taking on flesh, but should not be allowed to become excessively fat. She should be kept exercising, for she will produce more vigorous offspring, her udder will develop better, she will have an easier time at farrowing and she will take better care of her pigs. She can be made to exercise in summer by turning her out on pasture, and in winter time by scattering her feed in the straw, or by having her living quarters at one end of the lot and the feeding ground at the other. Her bowels should be kept in good condition by feeding roots, kitchen slops, skim-milk and bran.

It takes 112 to 115 days from time of breeding for a sow to give birth to her young. About a week before farrowing she should be separated from the other pigs and put in a pen by herself. As it comes close to farrowing time the breeder should become well acquainted with her and accustom her to being handled.

At farrowing have the house fairly warm and well ventilated. Watch pigs [illegible]

For the first day after farrowing, the sow will need little feed. If she shows hunger give her a thin slop of bran or middlings and plenty of water. For the first few days give her a bulky feed, such as alfalfa feed and ground corn. After 10 days begin to concentrate the ration, giving her such foods as middlings, ground barley or ground peas with skim-milk, pasture or roots. After one month feed her about all she wants, and keep it up until weaning time, for it is more economical to produce gains in the small pigs indirectly thru the sow than later when feeding them directly. Feed the sow three times a day.

The little pigs may be weaned at 6 to 10 weeks of age. Teach them to eat first before weaning. A good feed is ground corn 5 parts, and middlings 5 parts, wet with skim-milk. Feed four times a day at first. When breeding the sow again, do it within two or three weeks from time of weaning, if two litters a year are to be raised. When two litters a year are raised the first litter should come in March and the second not later than September 10th.—Hugh Fergus, State College, Pa.

WARBLES OR BOTS IN CATTLE

One of the very harmful pests of live stock is the Ox Warble Fly. The source of irritation, and the punctures grubs in the backs of cattle are a which they produce seriously reduce the value of infested hides for leather products. The flesh around the wound is sometimes so changed by the inflammation set up by the grubs that it is unfit for sale and must be discarded. This causes substantial loss, especially as the more valuable cuts are most frequently affected.

Life History.—The adult Ox Warble Fly is half an inch long, very hairy and dark in color. During the summer the female deposits eggs upon the hairs of cattle, particularly on the legs just above the hoofs. The animal licks the hairs where these eggs are placed, and the larvae hatched from them are carried by the tongue into the mouth. The young maggots pass into the gullet and penetrate its walls. From the gullet they migrate to the back, where they may be found under the hide during the late winter and early spring months. Small lumps or swellings on the backs of cattle indicate the position of the grubs. Each swelling is perforated by a small hole, thru which the mature grub emerges from the warble cell in the spring and early summer. They then enter the pupal stage, in the ground or under rubbish. In from three to six weeks the adult fly escapes from the pupal case thru a circular opening in one end.

Prevention and Treatment.—Every farmer should make a thoro and systematic attempt to exterminate this pest. This may be accomplished by the destruction of all grubs during the early spring months. The grubs when ripe may be extracted by squeezing the warbles between the thumbs. All extracted grubs should be destroyed. The Ohio Experiment Station urges farmers to adopt the plan of removing the grubs from the backs of all infested cattle, and destroying them. This will reduce the number of adult flies, consequently fewer eggs will be laid to produce grubs the next season.

Prevalence.—As an example of the prevalence of the fly it may be mentioned that on one farm 91 grubs were taken from the back of a two-year-old heifer; most of the other cattle were more or less seriously infested. Various estimates have been made from time to time of the loss occasioned by the Ox Warble Fly, but there are no reliable data of recent date upon which a close estimate can be based.—Ohio Expt. Sta. Press Bulletin.

LUNG WORMS

Pneumonia of hogs is not always due to worms, yet it is not uncommon to find young pigs, and even old hogs, to be affected, and dying from inflammation of the lungs and bronchial tubes due to the presence of large numbers of small white to whitish-brown thread like worms which are found to be located in the bronchial tubes. This parasite is quite common in the United States.

Verminous pneumonia is most often found on low or swampy land, altho it may occur on the uplands. This disease of pigs occurs at all times of the year, but is more frequently observed during the late summer and early fall. When pigs are first affected the symptoms are few and elusive, but as the invasion by this worm progresses the symptoms become more and more pronounced. At this stage of development, frequent spells of coughing are noticed.

There is a thick discharge from the nostrils which will at times contain masses of mucous. A close examination of this material will at times reveal the presence of young worms as well as adult worms. The symptoms most apparent to the owner are thinness and lack of development of the pigs. Death is probably due to the air passages being closed or to a watery condition of the lungs.

At times this disease may be confused with hog cholera or even with tuberculosis of swine. By careful study of the symptoms and history, together with the finding of the worms either before death in the discharges from the nostrils, or after death in the bronchial tubes at the base of the lungs, should be sufficient evidence to enable one to be sure.

It is very difficult to relieve hogs affected with lung worms because of the danger of injuring the lungs or air passages in undertaking to kill or dislodge the worms. "An ounce of prevention is worth a pound of cure." Be very careful not to introduce into the herd any hogs that are affected by the parasite. If you know that any low or swampy ground on your farm has been used as pasture for infected hogs, keep healthy hogs away from it. This is not an absolute preventive, as the trouble sometimes occurs in uplands as well as lowlands.—Dr. W. L. Boyd, Minn. University.

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Horticulture

STRAWBERRY CULTURE FOR THE BEGINNER

The time is here for many of us to begin active work in the strawberry beds. In fact, those of us who are not beginners decided by the close of the fruiting season last summer what varieties to continue and which to drop out. I am not, however, going to write for the experienced grower, but for those who for some reason do not grow berries. Some people think they have no suitable soil; others, the care too exacting; while many just don't try. It is with the hope that we may induce some of these people to raise at least enough for the home table of one of the most delicious fruits that is grown. I find, from the past five years' experience, that there is really no excuse at all for the great majority of farmers not to have this wholesome fruit for at least four to six weeks in the year in plentiful supply at a small outlay.

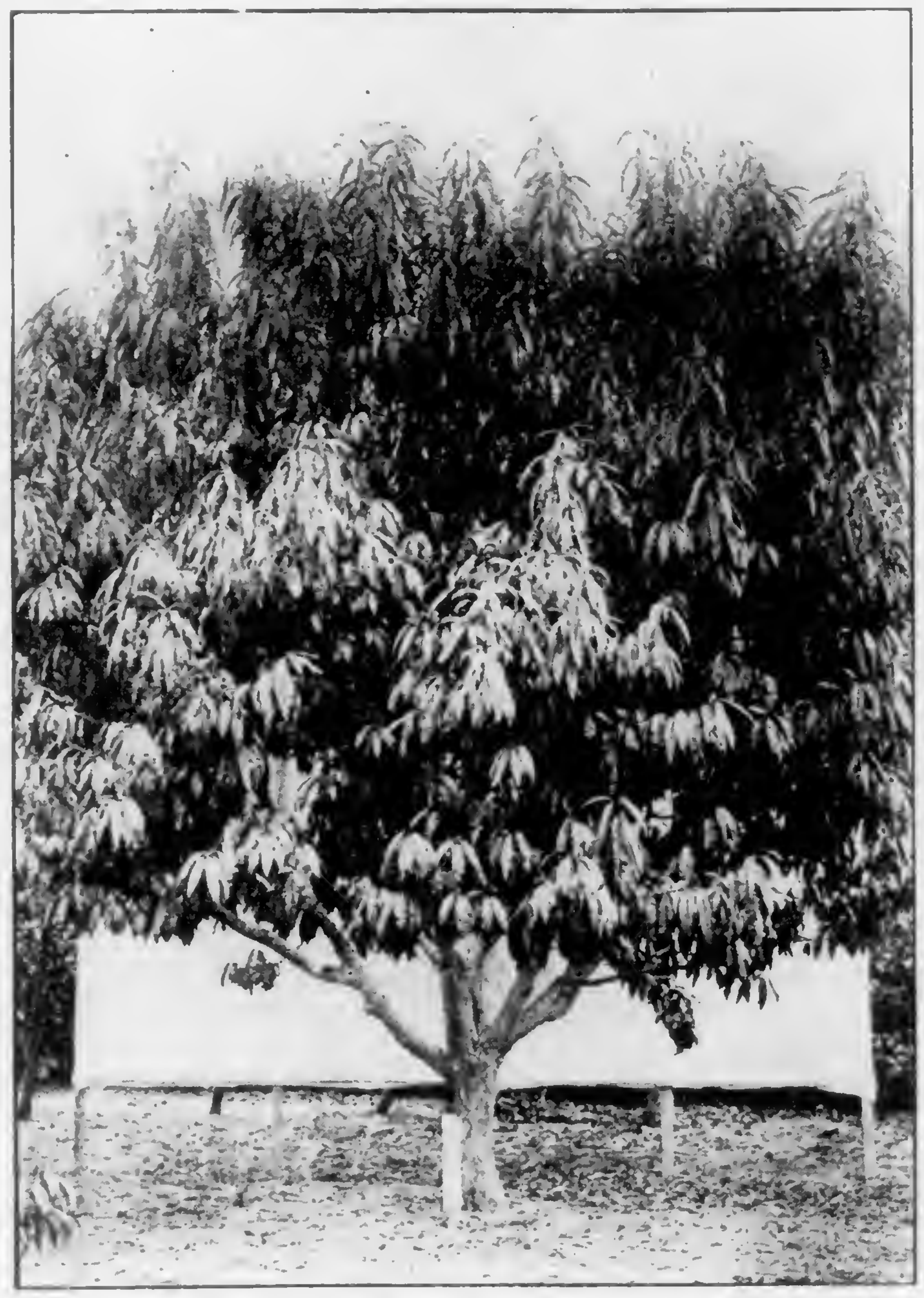
It does not matter much what kind of soil you have so it is well drained. It is true some kinds thrive best on a sandy soil, while others find a compact soil more congenial to their growth. Yet, in general, any soil that will grow a good crop of cabbage or potatoes will grow berries. Be sure to select a plot of ground that was cultivated the previous year, or you may have a fine patch of plants ruined by the grubs before you know it; and there is hardly any way to destroy this worm. These pests harbor in sod or land covered with weeds over winter and then plowed in the spring for the berry patch. Fall plowing seems to help keep this enemy at bay.

The strawberry, being a strong grower, and setting so large a quantity of fruit, naturally requires something to drive it. A dressing of well-rotter manure plowed down the first year is sufficient. If this is not available, then in planting make deep furrows with the furrow plow, put fertilizer in the row, and close up by going around to each row with the same plow. In a dry season, however, this method is often fatal to the plants. The soil should be well prepared; that is, harrowed and rolled enough to give a solid and thoroly fine bed.

There are several methods of setting out, either the hill system, the matted row, or a modification of both. If you try a lot in the garden, I would advise the hill system. This will give you much larger berries, and after the first year nearly as many. The older the plant gets the more fruit crowns it sets until six or eight years old, when it may be best to renew the bed. If you wish to set out 500 or more use the matted row method and horse culture. This will give you a maximum yield with minimum work; in fact, it is a question whether the hill system is at all practical from a monetary standpoint. I had the misfortune to be taken in by a large plant grower who advised close planting in beds of five rows and one foot apart each, with an 18-inch path between each bed. Figuring this out on paper gave a wonderful return per acre. In general I know the difference between farming on paper and farming in the ground, but in this particular case the thing looked so sure that I took the bait easily. For two years we plagued ourselves doing hand work on large beds with very meagre returns. In the cost of plants we lost $25, without counting the crops we should have had and failed to see. If one is growing the berries for pleasure, the hill system may be the best, but if you want the returns, then use the matted row.

Now as to the varieties to choose. The catalog is all right as a guide, but do not have faith in every variety you see. Look over the book, discount it about one-half, then go among your neighbors who raise berries and see what they grow. No matter if the nearest is 10 miles away, it is a better guide than the book. If possible, get the plants from him, and you will save money, time and very likely a crop. It took me two years of failure to learn this bit of simple advice.

I have tested about 35 varieties and I believe the list below is the surest for the average beginner in all soils. I put the old standby, Haverland, at the head of the list. It is a strong, vigorous grower and a great plant-maker. The ground is literally covered with bright red berries of fair size, running to large on fertile ground. It is an imperfect berry; plant it alone and you will get no crop. Tennessee is a very good mate for it in habits of growth and time of fruiting. Plant these two together, alternating, and nine times in ten you will be astonished at the results. New York is a good berry, specially adapted to thin land. It is extra large, of fine quality and will fruit alone. Senator Dunlap is another hardy variety that will thrive with much neglect. It has dark-red berries and the first picking runs very large. Three W's is also a good berry for home use. Sample is a standby. I would plant nothing but Chesapeake for late. It is the finest berry I have had the privilege of raising, as well as seeing. It is a strictly fancy, extra large berry, and very uniform in shape, and it is the best seller in the York markets at top prices. I have named the different kinds in their order of fruiting. If something earlier than Haverland is wanted, put in either Excelsior or Climax. I will not quarrel with those who think the above selection not good, but I have this to say: I am pretty certain that 80 percent more farmers will succeed with the above list better than any other. Haverland, Tennessee and Chesapeake are three-fourths of my plantings today If I had started with these five years ago, I would have realized several hundred dollars I failed to get. You know the old adage, Experience is a good teacher but a hard master.



THE TYPE OF TREE WE ARE ALL STRIVING FOR.

Having the ground thoroly prepared, mark the rows about four feet apart and plant 15 to 20 inches in the row Plan to have two rows of each kind together. Then you can dig your next year's plants between the rows and keep them from mixing. For setting out we prefer a dibble or common mason trowel. The ground should have a light rain before setting, or the loose dirt is apt to roll back in the hole and retard the work greatly. Press the tool in the ground with the right hand, pull towards you, at the same time having gotten a plant with the left; shake in order to spread the roots fan-shaped, then put in the hole. Put the tool in the ground about two inches from the plant and towards you, pressing the ground tight against the plant. Previous to planting, the dead leaves and all but two or three green ones next the crown, should be removed with a knife, also the tips of the roots. In the field, keep in a shallow vessel in a little water until put in the ground. Keep the bulk of the plants covered until ready to plant, as they dry out rapidly, and be sure the crowns are not covered in planting. Now we are ready for cultivation. Begin at once and go thru every week. Do not wait for the weeds to come before working the soil. Stay farther from the row at each cultivation as the runners start taking hold of the soil. At the last working in the fall you will have a nicely matted row, 18 or 20 inches wide.

When the ground is frozen, mulch with straw, leaves, shredded fodder or manure. I put manure last, for altho it serves as a good fertilizer, it brings so many weed seeds into the bed. As soon as the vegetation takes on signs of life in the spring the mulch should be raked off the plants just enough to allow them to get thru. What is between and still on the rows will serve the double purpose of holding moisture and keeping the beautiful clusters of fruit from getting sanded.

Now, friends, let us start in with a determination to add a little to the pleasure of farm life for those around us. Let us spend two or three dollars and a little of the energy that some expend kicking their heels together on a dry-goods box in the country store and we will have such a large supply of delicious berries as will put smiles all over the face of the good wife and children. And oh, how the children do enjoy them. I enjoy taking my flock out and telling them to help themselves when the ground is literally covered with great bunches of large, red berries. It surely adds to the health and enjoyment of all, and pays well for the extra work and trouble; so let us try next spring and see how much real satisfaction we can get from the effort.—Clayton F. Weaver, York Co., Pa.

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GROWING VEGETABLES IN HIGH ALTITUDES

There are a number of vegetables and many quality varieties of other kinds which, tho easily grown in the farm gardens and by truckers thruout New York and Pennsylvania, yet when planted in the open ground at the usual time will not grow to maturity up in the "hill country" sections of these states, where the altitude is 1,500 feet or more above sea level. Much of this "hill country" is the summer "playground" of thousands of city dwellers, who (during their vacation period at least) as a class are very partial to fresh vegetables of all kinds and are ready to pay a good price for them.

I first learned of this handicap in general truck-gardening at such altitudes several years ago while living in Sullivan County, N. Y., where the altitude ranged from 1,500 to 1,700 feet above sea level. At 1,500 feet the springs came fully two weeks later than in the valley country at the same relative distance north, while killing frosts came much earlier, thus making the growing season fully a month shorter than in the Hudson and Delaware valleys. In my section of this "hill country" Concord grapes ripened only in one year during six, and lima beans and large-growing late varieties of sweet corn both failed to mature enough to pick when planted at usual time. Such semi-tropical vegetables as watermelon and muskmelon so invariably failed to get to the ripened stage that the old residents no longer tried to grow them. I have since learned that this handicap is general in all the hill-top sections of the Catskills and Adirondacks, the White and Green mountains, and the higher parts of the Appalashean system thru northeast Pennsylvania; and that most people living in those localities yearly go without many kinds of vegetables—except as they buy shipped-in stock—which they could grow with a little inexpensive maneuvering. By the same method these vegetables can be grown on a market scale and sold to the summer residents and vacationists at a very good profit.

After the first season's disappointing outcome in planting in the usual way, I took to starting such vegetables as melons, cucumbers, lima beans and a large growing, long season variety of sweet corn in old tin cans, in conical tins made for such purposes, and in sods, with varying success. But the cutting and hauling of the sods is heavy, laborious work, while the conical tins rusted out in one season, making their use rather expensive. So I cast about for some substitute and better way, finally devising a home-made collapsible pot made of common tar paper, that readily permits of the discharge of the contained earth, all intact, with its growing plant ready to be set in the open ground with its roots little disturbed.

Each spring thereafter while living in that section, I started several kinds of tender vegetables that are difficult to transplant, in these tar-paper pots set in an ordinary glass-covered cold frame. By this practice I usually had cucumbers and sweet corn ready for the first of the summer vacationists, and fully three weeks to a month ahead of any of my hill-country neighbors, and from a week to 10 days ahead of the gardeners in the valleys. And I have riepned both watermelon and muskmelon ahead of fall frosts, and also lima beans and the large, late-maturing varieties of sweet corn. Some of my neighbors adopted my plan in a small way and got equally good results.

But planting in this way one is rather inclined, I found, to make the mistake of starting the seed in the pot too early, resulting in pot-bound plants. A pot-bound plant seldom makes but a stunted growth after transplanting to the open, and will give but a poor account for itself in amount and quality of crop. However, such plants as melons and corn and others that are praticularly sensitive to any root disturbing, after being transplanted from these collapsible pots, tho not wilting, usually stand still for a week without visible growth, but then forge ahead rapidly.

By experimenting, I found that to plant the seed in the pots a month ahead of the time my neighbors usually began corn planting in the fields was about right, thus avoiding having the plants too large for successful transplanting when the spring had become sufficiently advanced to allow steady growth in the open ground.

These home-made tar-paper pots may be made in any size desired, but I found the most satisfactory to be three and one-half inches square, and sometimes four and sometimes six inches deep, according to the kind of plant they are to contain. Corn and lima beans need a six-inch deep pot. These collapsible pots are patterned after the common paper pails merchants deliver oysters or molasses in, and they can be cut out of the roll of tar paper with no waste pieces. A carpenter's square and a sharp, strong knife are the only tools required. I have used most of my pots four years—some longer.

The common "three by six" foot sash will hold just 200 of the 2½inch square size, so a little calculating will show the reader that it does not require many of these sashes to start enough hills of melon, cucumber, corn or lima beans to fill an acre of ground when they are set out. All this may strike some readers as a puttering way of market gardening, but in these localities of high altitude where, unless so grown, these vegetables are not to be had in their fresh state, the price they bring fully covers the extra expense and leaves a nice profit. The "puttering" is an investment, just as fertilizer is an investment.—Clark Westford, Schenectady Co., N. Y.

TOMATO ROTATION—A CORRECTION

In the article on Tomato Rotation, in our issue of May 3, at the beginning of the last paragraph, first column, page 344, the type made the author say that "the tomato needs a large quantity of readily available plant food during the latter part of the growing season, etc." It should have read: "The tomato needs a large quantity of readily available plant food during the fore part of the growing season." This is an important difference which growers should bear in mind.

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TIGHT BINDING

The Dairy

OATS AND PEAS ON DAIRY FARMS

Each year the dairyman naturally asks, "What crop can I raise on my farm that will bring the greatest returns in the dairy business?" This question is not always easy to answer, but if one knows the conditions of the fields and what was grown on them last the answer is easier. The old corn field should be prepared early in the spring for grain. This is a common plan, but instead of sowing grain alone, let them try putting on a mixture of oats and Canada field peas.

If fertilizing of any kind is needed besides the available stable manure, or because stable manure can not be had for that field, let us apply some commercial fertilizer. When the ground is ready to sow put on some lime, say 500 pounds to the acre, 300 pounds acid phosphate, 75 pounds muriate of potash, and perhaps 50 pounds nitrate of soda to the acre. Put in oats and peas for a change, if for no other reason. The peas can be obtained from any reliable dealer selling field seeds. Examine the seed and see that it is not badly split, and not infested with weevils. Get enough to sow at the rate of 1½ bushels per acre, besides as much oats with it. Any good white oats may be used.

Oats and Canada field peas as an early spring crop may be used in three ways: (1) As a soiling or green feed crop; (2) as a rich legume hay, and (3) as a mixed grain crop to grind for hogs, sheep, cattle and poultry. My purpose is to call attention of all dairymen to the benefits derived from using this mixture as a crop each year on the farm.

OATS AND PEAS SOWN IN APRIL.
Ready to Cut June 20. Height 3 1-2 ft.

This crop may be counted upon as a sure way of getting a green forage crop to supplement the dry feed and the dry pastures in the early summer months. March and April plantings will be ready for feeding during early June. Later April and early May plantings will furnish green feed up to July 4th or later. For a herd of 25 or 30 cows, it is well to allow two acres for each sowing of oats and peas, and make three sowings—one as soon as the soil can be worked, the next two weeks later, and the last about three weeks later than the second sowing.

Those dairy feeders who are already familiar with the good feeding qualities of hay made from oats and peas will be sure to make the areas large enough to leave plenty of the crop to be cured for winter use. In cutting it for hay it must not be allowed to get too ripe. If the peas are hard, the cows do not like them so well. The areas mentioned here for each of these sowings may leave a little each time to be cured for hay.

When we get a larger crop of hay from this mixture than we can from common grasses, why should we depend upon timothy and red top so much in dairy sections? Aside from the yield, we must remember also that the quality of the hay is much better than timothy, for there is two or three times as much protein or milk-producing content. There is always a greater yield of oats per acre because of the presence of the Canada peas. A field sown with three bushels per acre, half peas and half oats, will yield more oats than if the sowing were all oats. This is because the peas gather nitrogen for the two kinds of plants, getting it from the air.

If the crop should be ripened and threshed, the grain may be all ground together. This produces an excellent balanced grain ration for the dairy cow. Why should we not produce more of our own grain at home in this very way? Oats alone seldom pay well for the cost of raising them in the East, but when raised in this mixture they will pay well, providing we have a mill near-by where the grinding can be done easily. Both oats and Canada field peas are very hardy plants. They stand a great amount of freezing weather in the spring after they are up. Do not be afraid of getting them started too early, even in the high mountainous regions of Pennsylvania. Some farmers sowed this mixture early in March.—Prof. K. C. Davis, Rutgers College of Agriculture, N. J.

ROTATIONS FOR DAIRY FARMS

In planning crop rotations for the dairy farm it is usually best to avoid growing a complicated rotation of crops. A few standard crops properly handled will prove more satisfactory than too wide a variety. Clover, alfalfa, corn and a small grain crop makes a simple and efficient rotation. Some dairy farmers advocate growing a variety of catch crops for soiling purposes during the summer, but the better way is to carry over enough silage to tide the cattle over periods of drouth, or to depend upon such field crops as oats and peas, alfalfa or green corn for soiling rather than go to the trouble of growing small patches of succotash mixtures. If we can bring our soil up to a condition favorable for the growth of clover, alfalfa, corn and small grains, we have done about all possible toward providing a balanced ration for our cattle and building up the fertility of the soil without resorting to outside sources of supply.

By growing corn, wheat, clover, or clover and timothy mixed, in a four-year rotation, and seeding a part of the farm with alfalfa, we have a system of crop growing that is nearly ideal for the dairy farm. Some dairy farmers prefer to omit the timothy and practice the three-year rotation, which is all right if one has a field of alfalfa to depend upon in case the clover fails to make a good stand; but, as a general proposition, it pays to allow the meadow to stand a year longer. Clover is a more active factor in soil improvement, but the timothy helps to thicken the sod and consequently gives us more humus-making material to work with. And, after all, one is on safer ground if he has a few acres of mixed hay ground to depend upon in case the clover seeding fails to make a satisfactory crop.

In harvesting and feeding these crops a large part of the corn crop should go into the silos and be fed out in connection with the alfalfa hay. Such a roughage ration, supplemented with reasonable quantities of purchased concentrates, will produce milk at a minimum cost. Whether it is more economical to grow oats and peas in the rotation, or to grow wheat, is a debatable question. In my own practice, I prefer the wheat crop because it serves as a cover crop in the winter and is better to seed the clover and grass crops with in this latitude.

The cutting and harvesting the hay crop has a great deal to do with its feeding value. We may cut our clover, alfalfa or timothy too soon or too late to secure its full and best nutritive value. One of the advantages of seeding timothy with the clover crop is that of properly curing the mixed hay. There is much less trouble in the cutting, curing and handling of the clover crop if it contains about one-fourth timothy.

On many farms greater profits may be obtained by expanding the system of crop growing and buying more dairy feeds and chemical plant foods. Many of the dairy farmers who are producing milk for the Buffalo trade depend largely upon purchased concentrates and give the potato crop a place in their crop rotation. By buying a few tons of fertilizer they are enabled to raise enough potatoes to pay their feed bills for the year. In fact, if it were not for the additional income from the potato crop, many milk producers would be compelled to sell their cows and abandon their business. By growing the potato crop in the rotation, and doing the bulk of the labor with their regular dairy help and horsepower, the crop is produced at a very low cost. I doubt if there is any cash or market crop that can be grown on the dairy farm that will pay greater profits than potatoes.

On farms situated further back from suitable transportation and marketing facilities, it would pay better to add a grain crop to the rotation. On such farms oats and peas will effect a big saving in the amount of purchased feed required to maintain a suitable milk flow during the winter months. One acre of oats and peas, seeded two bushels of oats and one of peas to the acre, will supply a milch cow during her milking period very nicely, and cut off from one-half to two-thirds of the feed bills, which it seems to me is an advantage worth trying.

You can raise a ton of oats and peas on an acre during favorable seasons, and the cow that has a ton of grain judiciously fed to her during the milking period is pretty well fed, as to grain. It may be profitable to balance it up a little to secure her maximum milk yield, and if you do, simply buy some of the highly concentrated feeds, such as oil meal and cottonseed meal. Under such a system of feeding, your cow will be better fed than some of those that are fed largely upon the purchased "feeds of commerce" that have had their proportion of food nutrients disturbed by the manufacturers who have put them thru various processes of manipulation.—W. Milton Kelly, Erie Co., N. Y.

JERSEY CATTLE CLUB MEETING

One hundred or more of the representative breeders of the Jersey—members of the American Jersey Cattle Club—met in annual convention last week in New York City. This was the first meeting of the club in its new building. The offices of the club occupy the entire second floor. The building, with the site, cost about $110,000, and is well adapted to the purposes for which erected.

It appears from statistics presented by President Darling that there are now 508 members of the A. J. C. C., and therefore there were only one-quarter of the members present at the meeting. The past year has been a prosperous one for the organization, and the number of registrations and transfers were over 5,000 in excess of last year's. Nine years ago, when President Darling made his first report, the registrations and transfers numbered, that year, 19,967, while for the year just passed they were 55,674. Last year there were registered 8,074 native-bred bulls and 29 imported ones. There were 17,233 native-bred cows registered and 390 imported ones. The total number of transfers for the year were 29,948. The income for the year from registrations of imported animals was $10,550, and from native-bred animals, $50,570. The total income for the year from all sources was $73,811.25, and the expenses were $66,753.83. Six new volumes of the Herd Register were compiled last year, in which are entries of 43,000 animals. The number registered last year was 25,726. There are now 163 breeders who have cows under the tests, the number of cows being so tested is 1,157. Since the previous annual meeting, 835 tests have been accepted for publication. The sum of $3,877 has been appropriated for fair premiums for 1913, and $7,000 for advertising.

A year ago a committee was appointed to revise the Scale of Points for judging Jerseys, and that committee reported thru Mr. George W. Sisson, Jr., of New York, this year. Mr. Sisson said that the task was a difficult one, and that while no radical changes were recommended, some particulars of description were added to make it more complete and accurate and some points were cut out here and added there, in order to approach more nearly to accurate values and to establish a truer relation between the "points" which an ideal Jersey might be supposed to possess. The old scale of points was pronounced out of date, not having been revised for several years, and was unsatisfactory and incorrect in many particulars. There was some sentiment in favor of putting the matter over another year in order to give members time and opportunity to give it more careful consideration, but others argued that a change was necessary; that all present knew what, or approximately what, changes should be made, and the present was the time for action. The report of the committee was unanimously adopted. The new schedule of points will be printed and mailed to all members at an early day.

In some remarks at the banquet on the previous evening, Prof. Rawl, of the Dairy Division of the Department of Agriculture, suggested that the club appropriate $5,000 to help establish community breeding associations with reference to the Jerseys, and to co-operate with the department in the work of organizing such associations. The suggestion was not without results, for the club voted to co-operate with the Dairy Division as suggested, altho no specified sum was named to be set apart for the purpose. This will be left with the board of directors. The club will be represented at the round table discussions to be held in connection with the National Dairy Show at Chicago.

President Darling was re-elected for another year, as well as other officers, and five new directors were chosen, viz: Prof. H. S. Redfield, of New York; M. D. Munn, of Minnesota; C. D. Hazen, Jr., of Vermont; Mrs. J. W. Henning, of Kentucky, and E. C. Lasater, of Texas.—J. W. D.

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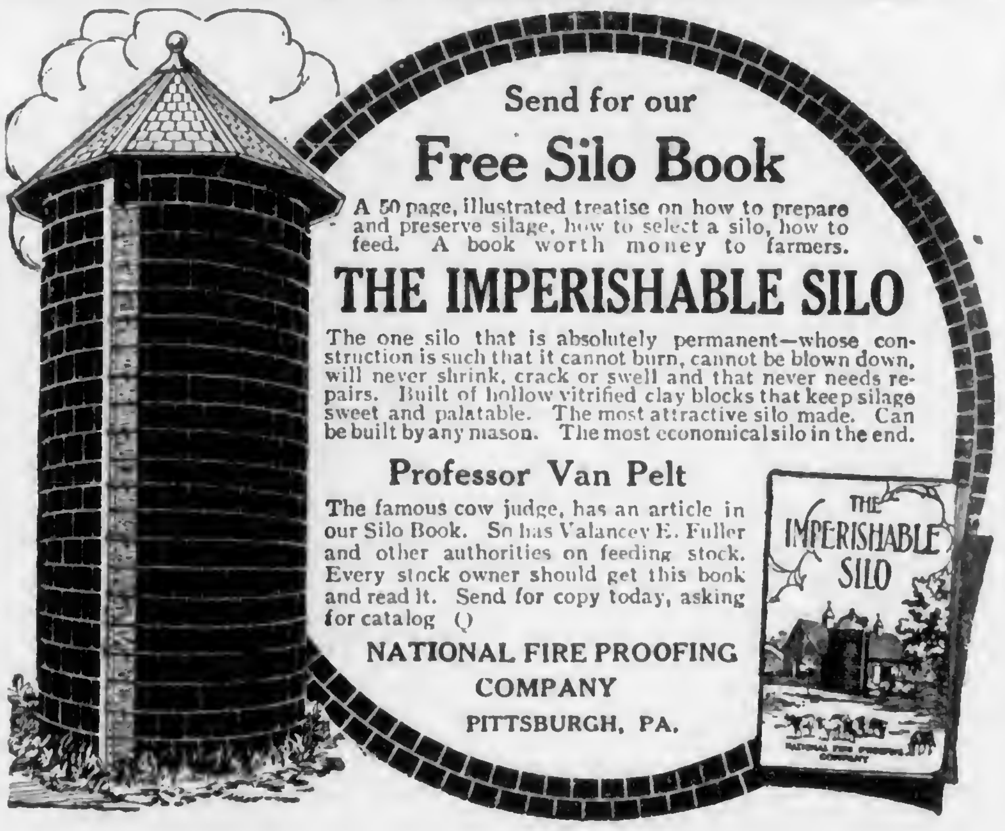
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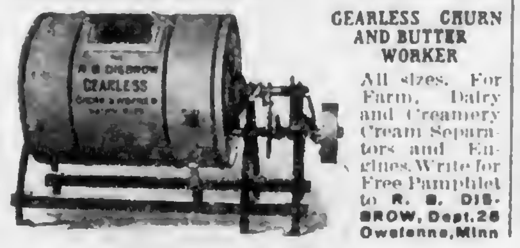
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Poultry

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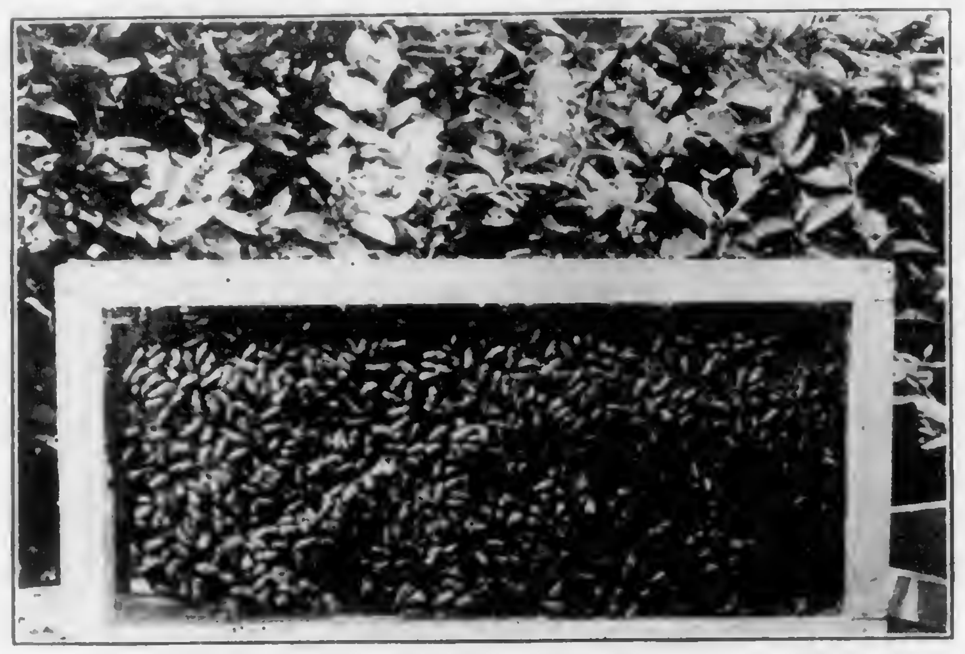

AN OBSERVATION HIVE.

We wonder how many readers have seen an observatory bee hive where the queen can be seen laying two and three eggs a minute, and the field bees coming in with their loads of pollen and honey and depositing them in the cells of comb, and other bees feeding the larvae, and still others building comb. Some may think an observatory hive a superfluity. The writer has had one for several years and, aside from the instruction obtained, it is the best paying hive in the apiary. This is not because of the amount of honey the bees may gather, but because in such a hive they attract and interest people and make honey sell.

One of the best educators for beginners is the observatory hive. Yet the many questions often asked by them thru the papers show that very few use the observatory hive as a means of acquiring a fair knowledge of the habits of the bee. Books are good, but what you read is easily forgotten, and nothing will impress facts upon your mind as readily as witnessing them. Not only does the bee keeper gain much from his observatory hive, but he also interests his neighbors and all who visit him, for very few sciences are as old and as little known as bee culture. In no other way can so much practical knowledge be obtained about bees as by observing them working in a normal way thru the glass sides of a hive. To those who keep bees, this hive is a source of amusement. A thousand little things which are absolutely needed to be known if one desires to succeed can be made clear by the use of an observatory hive.

If you are using in your yard a movable frame hive the matter is simple enough. Make the two end pieces, the bottom and cover the same length and hight as the hives in your yard, but only wide enough for three frames of comb. Five inches inside measurement is about right. The sides should be made out of good clear window glass.

The bees enter a tube and crawl thru the tube into the hive. The tube is made about two and one-half inches high, inside measurement, and about 20 inches long, or longer if necessary. The hive cover has a hole in the center two and a half inches in diameter, covered on the under side with wire netting. This hole is for two purposes. If the bees need feeding a pint fruit jar can be filled with syrup, then covered with one thickness of cheese cloth and inverted right on the wire, and the bees will do the rest. The other purpose is to ventilate the hive in very warm weather. This hole should at other times be covered with a small block.

Of course, it would be useless to put a swarm of bees into a glass hive, for a dark hive suits them better. About six days after you have had a swarm go to the parent hive you will find a number of ripe queen cells, from which queens will emerge in a day or two. Take three frames of hatching brood, with one or more queen cells, covered with adhering bees, and place them into the hive. Put on the cover and carry to the porch of your dwelling, or other suitable place, and adjust your hive in position. Some of the old bees will leave, but those that are hatching will make it their home.

For best results it is necessary to have on the porch a vine of some sort for a screen. Honeysuckle trained on chicken wire makes a splendid network of foliage that can hardly be improved upon. This mass of foliage is necessary for two purposes, it shades the hive, making it comfortable for the bees, for the direct rays of the sun shining thru the glass would kill the larvae and drive the bees from the hive. The second reason for the wall is to make a division between the flying bees and the hive. The bees enter the mouth of the tube and crawl to the hive. Very rarely, indeed, is there a bee to be seen on the porch. Your family may sit on the porch at any time without fear of being stung.—F. G. Herman, Bergen Co., N. J.

THE GUINEA

The value of the guinea, both as an egg and a meat producer is not recognized by many poultry raisers. The guinea has a wild, nervous disposition, and will roam all over the farm in search of bugs and worms. On account of this it is better to buy eggs and hatch young guineas rather than to buy old birds for a foundation stock. The old birds are apt to run away and not come back, while the young ones learn their home from the start. The chicken hen makes a very good mother for the young guineas, and if they are confined in a close box with the hen for three or four days they will learn her call and will follow her when allowed to run at large.

As soon as the young guineas will follow the hen they should be allowed free range and they will gather most of their food. Then can not stand wet weather very well, so that a dry, warm coop should be provided for them. The guinea is a warm-weather bird, and the young ones should not be hatched until well up in the summer. June, July and August are the best months for young guineas to be hatched.

There are two distinct breeds of the guinea, the white and the pearl, both being about the same size. The pearl guinea has a dark-colored feather, with small white markings in them, and the flesh is of a dark bluish color; while the white guinea has pure white feathers, and has not got the objectionable blue flesh that some object to in the pearl guinea.

The guinea hen will begin to lay in April or May, and if kept from getting broody, will continue until late in October. Our guineas made an average of about 90 eggs each last summer. She has a rather bad reputation as a mother, altho she will usually raise her young if allowed to hatch in July or August. The young guineas know her every motion from the very start, and she will care for them better if allowed free range with them.

Guineas are most industrious worm and bug destroyers. They will eat many insects that chickens will not, and if allowed access to currant and gooseberry bushes, will destroy the gooseberry worms on the bushes and will eat the potato bug.

Young guineas two pound size have been quoted by the commission houses at 45 to 50 cents each in the large cities for the past few years. Young guineas are a very good substitute for wild game birds, as they have a gamey flavor and a very tender flesh.

Some breeders keep one male bird for every five hens, but we kept only two male birds for 20 hens last year, and the eggs hatched as well as when more male birds were kept. When only a few male birds are kept they flock together better and a number of hens will lay in the same nest. We had as many as eight hens laying in the same nest last year. In this way the nests are more easily located, as there are guineas loitering about the nest at almost any time during the day.

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Grange

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EDITOR'S NOTES AND COMMENTS

Somebody did a golden deed;
Somebody proved a friend in need;
Somebody sang a beautiful song;
Somebody smiled the whole day long;
Somebody thought "'Tis sweet to live";
Somebody said "I'm glad to give";
Somebody fought a valiant fight;
Somebody lived to shield the right.
Was that "somebody" you?

THE GRANGE AND POLITICS

It must be understood that the grange is not partisan, but by the very nature of its object, it takes a live interest in political questions. In the obligation we find the assurance that it "will, in no way, interfere with your religious or political opinions." The farmers' interests are undoubtedly affected quite as much by legislation as is any other business, yet he has too often failed to consider propositions in any but a partisan way. He has remained a partisan longer than any other class of men.

The policy of the grange is to broaden him by presenting questions in which he is interested in a way that will show him his duty to himself and his business. Yet, this policy is not such as to stir up class feeling or a demand for class legislation. It is against class legislation, or laws favoring any class or business at the expense of others. Because of the farmers' partisan spirit, the unjust tax laws still obtain; tariff laws are made which discriminate against him; laws granting special privilege to prey upon him are enacted, or preventative laws are not enforced. For all this, he has himself to blame. His opposition has, in the main, been manifested by voicing complaint rather than by using the remedy of the free-born American—the ballot. Politicians have influenced him by crying loyalty! loyalty! Hence the farmer vote has been divided half and half and cast each way, thus counting for nothing. Partisanship has been counted synonymous with patriotism.

The mission of the grange, so far as it touches politics, is to teach loyalty to principles rather than party, and a patriotism that makes patriots and not partisans. So the discussion of principles and proposed laws, as well as needed laws, are well within place in the grange. When the higher intelligence is possessed by members, there need be no fear to consider all the problems that affect for good or ill the business of agriculture. The farm press is, in the main, fairly non-partisan, and can be relied on to give a fairly unbiased view. The farmer had much better take counsel from intelligent men who are interested in his own business than to form his own political opinions from the subsidized daily and county weekly papers.—R. P. Kester.

THE WOOL TARIFF

I have read with pleasure Mr. McSparran's thoughtful and well-written article on the tariff in the April 26 issue of Pennsylvania Farmer. I would like to notice one conspicuous exception to some of the principles he lays down.

He truly says that we have always had a surplus of the staples of the farm to export. That being the case, a tariff, however high, could not affect the prices here, for the price is fixed in the markets of the world. He also says farm products are perishable and must be sold when ready for market or they soon deteriorate.

The exception to these principles is wool. The day is far past when the United States had any wool to export. Wool, too, is about the least perishable of the products of the farm. If protection does good to any farmer it is to the wool grower. I do not argue for protection. The consumer has a right to buy where he can get the most and the best for the least money. Of course, he must help to pay the expenses of the government under which he lives. No doubt he will continue to do this in the future as he has done in the past, by paying a duty on the things he buys abroad. But why should he pay a duty on some foreign goods and not on others is not clear to me.

I know some fellow, conspicuous for his ignorance, or for his dishonesty, sometime in the past introduced the term "Raw Materials," and proposed to benefit the world by giving the manufacturer the free use of these. Just as if there were useful things lying around that did not cost anyone anything. Everyone knows that there are no raw materials except the untouched bounties of Nature, as the tree in the forest and the ore in the ground. As soon as a man does anything to any of them to fit them for human use, they become his finished product. Just what there is to show that he is less deserving than the last man who handles them does not appear.

So far as wool is concerned, it requires more business risk, more exercise of reason and judgment to grow a fleece of wool than is required in any other stage from the sheep to the wearer. The wool grower deals with flesh and blood; the next fellow merely attends a machine.

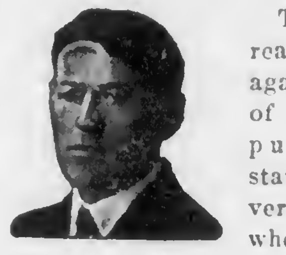
Owing to the cheap lands and mild climate of the Southwest the sheep industry has for years steadily declined in the northern states. If to this is to be added the cheaper wool of Australia, it takes no prophet to predict the result. The Pennsylvania farmer is brought into direct competition with the unskilled labor of the island continent. The manufacturer asks protection against the skilled (pauper) labor of Europe. Can a word be said in justification of free wool and protected woolens?

This is an argument for fair play only. If it were an argument for protection I would say there is a much deeper question involved than profitable wool growing. The most important question for the farmer of today, and for the statesman as well, is the conservation and the improvement of the fertility of the soil. If we are to feed the millions of the future (and they think now that we should do it for less than we are) we must raise more to the acre and do it at less cost. To do this, two humble agents are necessary—the sheep and the dairy cow. The sheep is rightly called the animal with the golden hoof, especially for our uplands.

Increase by half, in the next decade, the number of dairy cows and by threefold the number of sheep in this state, and I will promise that in addition to the increased dairy products, mutton and wool, we will raise, without additional expense, more wheat, more corn, more oats, hay and potatoes on the same acreage. I will leave the floor to the man who can defend free wool and protected woolens.—Jerome T. Ailman, Juniata Co., Pa.

McSPARRAN'S GRANGE NOTES

Where Were Our Statesmen?



There is so much real argument against the issuing of bonds for any purpose by the state that it is very surprising when the question came to vote in the house at Harrisburg that only two votes were registered against it. It is unthinkable that only two people in that house were opposed to the issuing of these bonds under the circumstances. Even if every member were in favor of the general proposition of the state borrowing money for improvements, yet the present condition of affairs in our highway department would surely cause quite a number of our representatives to hesitate to enter upon such a dangerous financial policy at this time.

A plausible excuse that would satisfy a politician would be that it was an important subject and should be referred to the people, but a flimsy excuse like that does not satisfy the statesman. The statesman recognizes that he is looked upon as an expert in legislative matters, and uses his best judgment to solve the problems before him so that a policy may be maintained that will be for the best interest of the whole people.

It is a splendid principle for the people to have the ability to have such matters referred to them when they demand it, but in this case the people will have the opportunity to act upon it if two legislatures pass it. It is implied in the constitution that the passing of two legislatures is upon the merits of the question, and so unless every member who voted for the bill voted because he was in favor of the proposition, he broke his oath to support and uphold the constitution. We can not think the sentiment was so unanimous.

It is an unusually important question, because its decision, if favorable, not only approves this proposition but establishes a precedent of great danger. If it is right to bond the state for roads, it is right to bond the state for many other things. Where were the statesmen of the house? A politician would dodge the question; a statesman never.—John A. McSparran.

The Grange in New York State is growing rapidly. At the last State Grange meeting a total membership of 103,000 was reported in 815 subordinate granges. Recently a grange in St Lawrence County initiated 78 persons at one meeting, the largest number ever received at one meeting by any grange anywhere. One county (Jefferson) has a grange membership of nearly 7,800 in 33 granges, and 23 of these granges own their own halls. The valuation of these halls is $58,000. The county, or Pomona Grange, has a membership of 1,100. The Grange Insurance Company carries $16,265,534 in 7,196 policies. Chautauqua County also exceeds 7,000 in grange membership, and three others exceed 5,000 each.

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The Lawrence Publishing Co., Proprietors
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Philadelphia, Pa., May 17, 1913.

THE TARIFF BILL

The Democratic tariff bill passed the House on May 8, by a vote of 281 to 139. It now goes to the Senate, where it is expected to be out of committee by June 1 and open to discussion. It seems assured that the measure will meet with more effective opposition in the Senate, and some changes seem likely to be made in that body. It is reported that manufacturers and other interests are planning a systematic campaign against it, and certain producing interests will join in such protest. The majority party is in perfect control, however, and there appears to be little that any interest can do to secure important changes in the bill as drawn. Farmers particularly are showing small interest in organized protest. An avowed purpose of the bill is to lower cost of living, and agricultural products are singled out for downward revision; yet this sweeping change was a thing of course after the vote of last fall, and the farmers appear to feel that they must take the consequences and wait for time to measure the results. This is undoubtedly the wisest course, and all farmers may profit more by preparing to meet the resulting changes in conditions than by wasting time in protest against what appears to be the inevitable. Perhaps the two most important changes in rates on agricultural products, as measured by their influence upon production, are those on wool and sugar. All classes of raw wool are placed on the free list. There is no use in arguing that this will not injure the sheep industry of this country. The experience under the Wilson free wool law is ample proof of the result to sheep growers. Present wool rates are admitted to be too high. They have been made so by the past combination of the votes of representatives of the wool growing and woolen manufacturing states. But while present rates have been proved to be exorbitant, as measured by the result in prices of manufactured woolens, it is yet to be determined that the rates on raw wool are greatly in excess of the difference in cost of production at home and abroad, and it is generally admitted that they have small influence in affecting the cost of woolen goods or suits to consumers. Yet in order to secure lower rates on the manufactured articles, raw wool and the sheep industry are to be sacrificed. This sacrifice is morally certain; the benefit to consumers will remain in doubt until demonstrated. The farmers of the East have little to fear because of the relatively small number of sheep kept; but the West will feel the effect, as will meat consumers of every section in the increased cost of mutton and lambs. The rate on sugar is to be reduced 25 percent, and removed entirely on May 1, 1916. As in sheep growing, the margin of profit in American sugar production is so small that this change will threaten, if not complete the destruction of the industry. And again, as in the case of wool, the beneficial results to consumers will be extremely doubtful. But aside from these two classes, the direct effect of proposed changes may not be expected to fall heavily upon producers. There has been much talk of the benefit of a protective tariff to farmers in the past, but the talk is only heard in the heat of political campaigns, and actual benefits have never been prominent. The proposed bill places meats on the free list, and retains a moderate rate on all live stock except swine. As meats in this country are not much if any higher than the world's price, no decline should follow. Cream and milk are to be made free, with rates on butter, cheese and eggs. What effect is felt from this change will be largely confined to those states along the Canadian border, and will not be general. All cereals, except rye, are to carry low rates of duty, and as we are and may expect to be an exporting country in such grains, we have small reason to fear disastrous results from these changes. Flour is to be free with reciprocating countries, which may mean a slight readjustment of the milling business here but few far-reaching effects. The duty on hay is to be lowered from $1 to $2 per ton. Fruits of the classes in which our eastern farmers are interested are to retain their duties, 10 cents per bushel of 50 pounds on stone fruits and apples, and one-half cent per quart on berries. Potatoes are to be placed on the free list. In seasons of light production, as two years ago, this will undoubtedly affect prices, but in normal years little influence may be expected to be felt. These are the principal changes proposed on staple articles, and except in the cases of wool and sugar, they would not prove disastrous, even tho farmers depended more upon a protective tariff than is now the case. Of course, there is the further possibility of low prices due to depressed business and decreased purchasing power. But that is beyond the reach of farmers to influence, and as an actual menace is more fancied than real. There are the usual claims of disaster and ruin to all business which always accompany a change in tariff rates, and such claims will continue to be a part of tariff legislation as long as the matter is left in the hands of political parties, but even if such depression should follow, the farmers will suffer less than other classes. Your representatives in Congress will appreciate an honest expression of your opinion of the influence of the proposed changes upon your business, but we do not believe that eastern farmers have much to fear from the direct results of the pending bill.

THE AUTO TAX

The American Automobile Association is considering the advisability of testing the constitutionality of the automobile registration tax which is in force in some states. The specific case which it is proposed to carry up is one originating in New Jersey, where three forms of taxation are imposed upon automobile owners. These include a fee on registration of car, driving license and a property tax. The case has had adverse decisions in the New Jersey courts, and the association is now considering carrying it to the Supreme Court of the United States. The association claims unconstitutional discrimination against the automobile as a road user, and resents the efforts made in various state legislatures to increase fees to an exorbitant degree. It would seem to have good grounds for such a case as it proposes to make, as it can not only show apparent discrimination, but double taxation as well. But even tho it may secure a favorable decision from the Supreme Court, it is not probable that it can avert the reasonable tendency on the part of the states to impose a heavy road tax on automobiles. Aside from the increased danger of road travel with other vehicles, due to careless driving and reckless speeding of autos, which many people think calls for discriminating taxes on the automobiles, it is becoming more and more evident that the rapid moving cars are the most destructive of good roads, and thus should carry a proportionate burden of taxes for road maintenance and improvement. The narrow-tired wagon and the heavily loaded wagon have at different times been subject to special taxation because of injury to roads. The same principle would impose such a tax on the automobiles. Again, a state like New Jersey, whose roads are traveled by so many non-resident cars, should have some means of protecting itself from the damage of non-tax paying autoists, or secure returns from such non-resident autoists somewhat commensurate with the damage done to her roads. Whatever the decision of the Supreme Court, the very nature of the use of the automobile demands that it pay special taxes for its use.

"GET RICH QUICK" FARMING

A young man purchased a 20-acre farm in one of the eastern counties just a year ago. The young man was born and raised in a city; knew nothing of farm life, but was one of that army of city men who are tiring of the endless grind of city monotony and longed for the freedom of the country. He had raised poultry in a limited way in his back yard in the city and had met with great success. He carefully selected his stock from purebred strains, eliminated the unprofitable birds, watched his little business carefully, and sold his stock for fancy prices to his city friends. His longing for greater possibilities became greater, and he purchased this 20-acre farm, for which he paid $1,800. On his city poultry venture this man had made a profit of $2.06 per hen, and he immediately applied these figures to his new farm. He had the room to keep 800 hens last year, and by building additional houses the flock could be increased to 1,200 or 1,500 birds. But on the 800 bird basis the profits would be $1,648, and with 1,500 hens it would be $3,090; what an easy and sure way to get rich! Every year there are hundreds of men who figure their chances of success in just the same way, and the results are invariably the same. The man in question has now been running his business for a year and if it had not been for the fact that he had a little money put away, his taxes would not have been paid. So far he has made a total failure, and the future depends upon the amount of money he has at his disposal. His failure was not because he was lazy or because he did not study the business, but because he lacked experience to handle a large business. Conditions were very different from the back yard; entirely new problems were to be faced and market conditions were changed and complicated. This case is typical of hundreds of farm failures. It is so easy to figure profits on paper, and it is such a simple matter to get rich quick by a multiplication of units. "If one hen yields a dollar then 5,000 hens will bring in $5,000" is simple arithmetic and yet when put in practice all at once it fails. The failure is not due to faulty mathematics but because of other factors which are not considered. Start with one hen and increase by tens rather than by thousands. Learn to make a profit from a hundred birds before keeping a thousand, and when that is done keep two hundred, etc., and when the 5,000 mark is reached the profits will come. This same principle is applied to all branches of farming. It is better to start at the bottom and work up than to start at the wrong end and go down. In other words, it is better to grow into the farming business than to go into it.

DANGEROUS RAILROAD BILL

The past few years have witnessed many legislative efforts to regulate the business and operation of railroads. Apparently acting on the more or less popular belief that all railroads are in need of state or federal regulations, all kinds of proposals have been made. The history of railroad development and operation in this country is sufficient evidence of the need of stringent regulation to control stock manipulations, rates, etc., and to prevent abuse of power. But much of the regulation proposed is of a nature which imposes unwarranted restrictions on the operation of the roads without any material improvement of service. An example of this is found in a bill now before the Pennsylvania legislature, which seeks to dictate the order of promotion of railroad employes and define qualifications of employes for such promotion. As is well known, all men now serve a long apprenticeship on railroads before they are placed in positions of responsibility or trust. The roads insist on this as a simple safeguard to their own property, and as a matter of good business may be expected to exercise proper and sufficient supervision over such promotions without being compelled to do so by state law. But the bill contains another feature of far reaching interest. It provides that no person can be appointed to the position of engineer who shall not have had at least 18 months' experience as a fireman or engineman, or as fireman at least three months immediately preceding such appointment upon the road upon which he is to be appointed. This provision can scarcely be intended or designed to secure greater safety to the public, but it would render a road helpless in case of a labor strike. The three months' previous service requirement would prevent the employment of strike breakers or emergency crews, and the road would virtually be compelled to suspend operation until differences were adjusted, to the great inconvenience and loss to the public. As the public always bears the burden of such interference with a public utility institution, the proposed law would be serving only the railroad employes in case of a strike, and would accomplish nothing in the improvement of service or increase of public safety.

PENNSYLVANIA LEGISLATIVE NEWS

Up to Senate.—The legislative situation is now up to the senate. The house has cleared up practically all of the big legislation, with exception of appropriations, upon which action will not be delayed. The public service commission bill is the last of important bills to be considered, altho the house will probably get all of its work back with senate amendments to review. The lower branch has been the most industrious in the history of the commonwealth, and while it has approved a mass of trivial legislation and has unwarrantably held back its appropriation bills, it is in better standing on pledged legislation than the upper house. No date is set for the end of the session, which is notable for the number and variety of its bills, the extent of its oratory and the expense of operation and printing.

Fifty Main Routes.—A limit of 50 main highway routes is practically decided upon. In addition, something like 35 changes in routes may be authorized, but no more.

Commission Bond Bill Amended.—The Williams bill, requiring commission merchants to give bond for the proper handling of farm produce has been amended again, but should reach final passage by the end of this week. The last change makes action proper in any county where offence was committed. This change enlarges the scope of the prosecution. The law proposed is similar to the new act in New York. Opposition has developed from time to time, but the sentiment in favor of the bill among rural members appears to be strong. Instances have been presented showing that it would have been good for farmers if on the statute books 20 years ago.

Bullfrog Bill Out.—The Buckman bill to regulate catching of frogs, is out of committee and billed for passage. It makes the season for catching bullfrogs from July 1 to October 1, leopard and pickerel frogs being excepted; for catching terrapin November 1, to March 14; snapping turtles, September 1 to June 15. It prohibits catching frogs by use of lights at night and prohibits anyone having more than 25 tadpoles in his possession at one time.

Pending Bills.—In addition to the bills for appropriations for vocational education, agricultural demonstration work and other items, the following bills are pending in the legislature: Making railroads liable for damage caused by fires originating on rights of way and from sparks from engines, recovery to be by action in trespass; appropriating $100,000 to pay county fairs state aid for exhibitions held within two years beginning June 1; requiring trolley cars to turn off searchlights when approaching any animals, whether led or driven; appropriating $150,000 to reimburse counties for amounts paid for bounties on noxious animals, and prohibiting operation of traction engines, motor trucks or other vehicles weighing over 14 tons over any road or bridge without obtaining permit from highway authorities after July 1, 1914. This bill carries $500 as a penalty, and is being fought in committee.

Animals at Large.—A late bill proposes to make it unlawful for any horse or mule to run at large on public highway, and allows anyone to take up such animal and keep it until $5 and expense of keep are paid by owner.

Three-Fourths Rule.—Governor Tener has vetoed the bill which would have allowed two-thirds of members of school boards to elect relatives of directors as teachers. The rule taking a three-fourths vote will stand.

Borough Legislation.—Out of the mass of legislation affecting boroughs, two bills have passed the house and are now in the senate and deserving of careful attention. One provides for boroughs initiative and referendum, even including legislation relative to liquor legislation. Under this plan the towns would come close to real self government if they chose to exercise it. The other provides a means whereby boroughs may have their charters annulled upon petition of 75 percent of voters. The development of first-class township government has been so rapid some of the very small boroughs desire to return to that form to eliminate greater expense of borough government.

Township Legislation.—The house has also granted some important additions to powers of townships, altho some may not pass. One is to allow second-class townships to incur debt for various proper purposes. First-class townships, which have the commission form of government, have had powers enlarged by various bills until they have almost the same advantages of boroughs, water, fire, light, school and other privileges having been conferred.

Seed Law.—The Department of Agriculture is preparing for the enforcement this year of the pure seed law. This measure, already reviewed in this column, establishes standards for various seeds used on the farms, and allows state inspection, just as is had for cattle feeds, paris green, fertilizer, etc.

State Fair Bill.—At this writing the State Fair bill remains in the house appropriations committee. The small fair people are making strenuous efforts to kill the bill, but the administration and representatives of various organizations have been urging that it be sent to the house so that the project may be authorized. The indications are that if the bill comes out an appropriation for only a site will be given.

Flood Warning Plans.—The house has sent along the bill for a system of flood warnings. It proposes to establish gauging stations on tributaries of rivers and larger creeks, and when a heavy rainfall or rise occurs telephonic and telegraphic messages are to be sent to the exchanges in towns further down the valleys. Newspaper co-operation has also been anticipated.

Dams and Water Supply.—An administration bill pending in the senate largely extends the power of the state over the water supplies and dams. Under its terms no city, borough, township or corporation supplying water, storing water or furnishing water power may secure a new supply without making application to the State Water Supply Commission. While this bill is designed to put a padlock on the stable after some valuable stock has been taken out, it is nevertheless going to be an important measure for the future. It gives the state absolute control of what is left. Provision is made for investigation, hearing and appeal in such cases. A companion bill regulates the construction of all dams.

Cigarette Law.—The newly approved act relative to the sale of cigarettes to minors is the most drastic of any in the United States. Briefly, it prohibits anyone under 20 years of age from smoking, as no one may sell or give a cigarette to a minor under penalty of $100 to $300 fine. Any minor who refuses to tell where he or she obtained cigarettes is to be made liable to $5 fine or 5 days in jail, if over 16, and to the care of the juvenile court if under 16.

Sale of Game Birds.—A game bill just signed by the governor puts a stiff penalty on the sale of various kinds of game except between September 1 and January 1. It includes wild duck, wild turkey, deer, quail, grouse and woodcock.—Hamilton, Harrisburg, May 13.

NEW JERSEY FARM NEWS

Good Hay Prospects.—There will be a huge crop of natural hay cut this year from the lowlands bordering the upper Passaic River. Four times since January 1 these meadows have been flooded. The silt brought down from the hills by the Passaic, Rockaway, Whippany and Pompton rivers has been deposited in a thin coating all over the meadows, affording a fertilizer of the best kind. Already in places the grass is a foot high and of excellent quality. The most of the low meadow consists of natural red top and foul meadow grass of excellent feeding quality for both horses and cows. The farmers themselves prefer the low meadow grass of the better quality to timothy or clover grown on higher land. City buyers familiar with its excellence are also anxious to secure it.

Truckers Are Busy.—Truck farmers thruout the state are now busy. Many acres of kale and spinach from the rich bottom lands of North Jersey are now being harvested. The asparagus yield on the large plantations of central and south Jersey is the largest and best in years. Favorable prices are being received. Market gardeners have up and growing such crops as peas, string beans, lettuce, beets, onions, carrots and other early vegetables. A great many early potatoes, tomatoes, peppers, celery and sweet corn will be raised for the late market, which it is said pays better than the early market because there is no competition from the South at that season. A large acreage will also be given to lima beans.

Potato Outlook. Given favorable weather, New Jersey potato growers will eclipse all previous records this season. The acreage is reported to be larger than ever before, and as farmers are coming to understand more intimately the secrets of potato raising, there is every reason to look for a banner yield this year, despite that fact that many fields had to be replanted because the wet weather rotted the seed. Last season the returns from the potato crop were not very remunerative, none but the earlier varieties yielding a full crop, and prices thruout the year being somewhat lower than usual. The growers were not deterred, however, by the discouragements of 1912, and fertilizers and seeds of a greater value than ever before were put into the ground this year.

Exchange Opposes Free Potatoes.—The Monmouth County Farmers' Exchange, the most powerful farmers' organization in the East, has sent a letter to the Representatives in Congress from New Jersey, protesting against putting potatoes on the free list. This letter did not receive the unanimous approval of all the members, and many believe that not much danger need be feared by American farmers over lessened protection for potatoes, and most farm products in general, for that matter. Not much relief can be expected by consumers, except in times of considerable local shortages, as in the failure of the potato crop some years ago. The simple truth is that the law of supply and demand is international in effect, and will generally over-ride tariff conditions, except in abnormal years. The comparative scarcity of farm produce will be almost certain to keep prices profitably high, and any danger that may be feared can reasonably be expected to be offset by restrictions on manufactured articles farmers use.

Summer School for Teachers.—For the first time in the history of New Jersey, a teachers' summer training school is to be held at the State Agricultural College this summer. The funds for this purpose are provided by legislative appropriation. The time set for opening is June 30, and the course will continue for six weeks. Tuition will be free to teachers of the state. The state law now credits agriculture as a subject on the teachers' certificates, and requires on all permanent certificates manual training, which includes the various forms, for both men and women, of woodwork, sewing, etc.

Weather Reports of Use.—Farmers are making good use of the United States weather reports furnished by the various local bureaus. Farmers who have followed them in regard to storms and hot and cold weather, find them near enough correct to make heeding them worth while.—D. T. H.

MARYLAND NOTES

Weather Conditions.—Cold nights on May 9 and 10, frost occurring in low sections, did considerable damage to vegetables. The ground is very dry, and vegetables, corn, etc., are coming up very slowly. In some sections reports come that early planted potatoes, owing to continuous rains rotted, and will have to be replanted. Forest fires in Washington and Frederick counties burned over 2,000 acres. In some instances farm property was in great danger.

Antietam Memorial.—The Washington County Historical Society has taken steps to have the historical Dunkard church on Antietam battlefield preserved. The church was used as a hospital during the Battle of Antietam.

Milk Inspection.—The State Board of Health is to send representatives to Centreville to make rigid tests of the milk supply sent in to that place. The local dairies are much interested in the prospective visit.

Fruit Damage.—Harford County fruit suffered from the cold spell. General Vandever's orchard on the Spesutia Island farm, 14,000 trees, will scarcely have a peach. The bright prospect of a harvest of 40,000 to 50,000 baskets was nipped in one night.

Heavy Electric Storm.—A remarkably severe electric storm visited Harford and Cecil counties on April 20. Between Port Deposit and Perryville, thousands of herring were stunned and killed and came to the surface on the Susquehanna River, on the Cecil County side only. The river divides Cecil and Harford counties. The herring were running in shoal water near the shore to deposit spawn, an annual event, when they come in millions. The dead and stunned fish were in such abundance that thousands were secured, and on the next day the hands of the foundry at Perryville took a day off and gathered more fish than they could carry. A similar event occurred during another electric storm many years ago.

Sweet Potatoes.—Caroline County has put in the largest acreage of sweet potatoes it has ever had. Quite an unusual number of farmers are to try lima beans this season.

New Navy Dairy.—Twenty-five farmers living near Annapolis offer to sell their farms to Uncle Sam for the proposed dairy for the Naval Academy. The offers received show an average acreage of from 200 to 500 acres, ranging in price from $40,000 to $75,000. A committee will inspect to see which are most suitable for the purpose of a dairy farm.

Dog Tax.—Frederick County is seriously considering placing a tax upon all dogs in the county. A law passed several years ago, which has never been put in force, will allow it to be done. Mad dogs and sheep killing dogs are increasing so they have become dangerous. Were it not for worthless dogs, Maryland would be a great sheep growing state.—G. O. B.

NEW AGRICULTURAL LAWS IN NEW YORK

After affixing his signature to several agricultural bills last Friday, Governor Sulzer of New York said: "The signing of these bills marks the longest step in advance for the farmers of New York State which has ever been taken at Albany. I have considered this legislation carefully and I believe it will work to the lasting benefit of the farmers." The bills signed were the following: 1. The Cole bill, licensing and bonding commission merchants. 2. Amending the adulterated milk law by making milk produced or kept in unsanitary conditions, adulterated milk and making its sale punishable as a misdemeanor. 3. Placing the almshouse farms of the state under the supervision of the Commissioner of Agriculture, as are now farms of state institutions. 4. Authorizing the reprinting of the "Apples of New York"—a magnificent work of two volumes—to be sold at cost to the citizens of the state. 5. Amending the general business law by providing for the incorporation of co-operative associations for the purpose of conducting a general producing, manufacturing and merchandizing business in farm products, farm supplies, machinery, etc. 6. Amending the agricultural law by prohibiting the sale of cheese made from skimmed or partially skimmed milk, unless it is branded with the words "Skim Milk Cheese." 7. Creating a bureau of supervision of co-operative enterprises of the state.

It is expected that the bill relative to the formation of co-operative credit unions will be signed in a few days, which will complete a list of agricultural measures that can not fail to be of great benefit to the farmers of the state.

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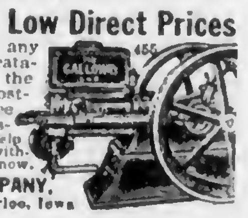

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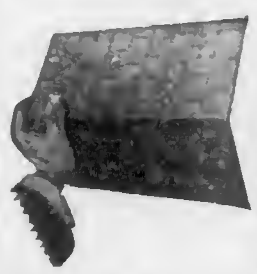

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Cooking Without Fire.

By MARION HARRIS NEIL.

A fireless cooker is one of the most valuable modern helps for the busy woman. Fireless cooking is nothing new. It might be of interest to know that the principle of "fireless cooking" is ancient. The Chinese, the Crusaders, the Norwegians, and our own primitive Indians applied the same principles under certain conditions and emergencies. But in this present advanced age we have this principle commercialized and embodied in the fireless cooker, so that each and every household can avail itself of this method of cooking and share its advantages.

What is fireless cooking? The principle is very simple. The fireless cooker does not generate its own heat, but any kind of food once brought to boiling point and placed in a fireless cooker will continue to cook. The cooker, being thoroly insulated, will retain the heat, and the process of cooking continues until the food is done.

Fireless cooking is very simple. There is no need for any change in the usual preparation of the foods. The secret of the success and the quality of the cooking done with the fireless cooker lies in two essential features. The first of these is in the slow cooking process, whereby thoro cooking has the opportunity to properly accomplish itself. By this slow process of cooking the fibrous and cartilaginous properties of all animal foods, such as meats, fowls, etc., are rendered to a gelatinous state. It admits of all vegetable matter undergoing completely the necessary chemical changes. By this thoro process the minute cells which constitute the grain in all cereals are reached and are exploded, so that any cereal cooked by the "fireless" method is more easily digested. The second essential is in cooking under properly sealed compartments whereby all the food values and flavors are fully developed and retained, all nutriment conserved.

An improvement that means a long stride ahead in the efficiency of the fireless cooker is the use of disks or radiators for supplying heat in addition to the non-conducting materials that line the cooker and surround the utensils. Formerly the cookers were practical for little else besides boiling meats and vegetables and cooking cereals. With the disks, meat may be roasted or baked, and puddings, pies, cake or bread baked, so there is almost nothing in the way of cooked food that can not be prepared by the fireless method.

Of course there are various kinds of cookers, and an equally varied assortment of the disks or radiators. Three methods are employed for cooking in a fireless cooker. One with the heated radiators only, and the food placed in the cooker cold and raw. A second method is to first heat the food or bring it to boiling point, and place it in the cooker without the use of the radiators. A third method is a combination. The food is heated or brought to the boiling point and placed in the cooker with heated radiators, using one or two of the disks as the case may require. While preparing the food the radiators may be heated over any kind of stove.

The economic value of a well-constructed fireless cooker is almost beyond measure. Evaporation is reduced to a minimum, so that there is little or no loss in weight, quantity, or in food value. Apart from this, there is a most appreciable saving of time and labor in the preparation of meals. Cooking by fireless methods does not require the same care and close attention demanded by the ordinary stove methods, especially gas or oil stoves. While the cooking is being done, the time can be devoted to other duties.

A tremendous saving is effected in fuel, particularly in oil or gas. The burning and overcooking that frequently occurs with the use of a constant fire, especially when the utensils come in direct contact with the flame of a gas range or oil stove, can not occur with a fireless cook stove, because the maximum heat is generated in the radiators and stored, and altho this heat is very intense, it is expended in the process of cooking. When the cooking is accomplished, the heat, being reduced, will keep the food hot but it can not burn. It is surely conducive to the best comfort in the kitchen to be able to cook, during the hot summer months, without the intense heat produced by a constant fire.

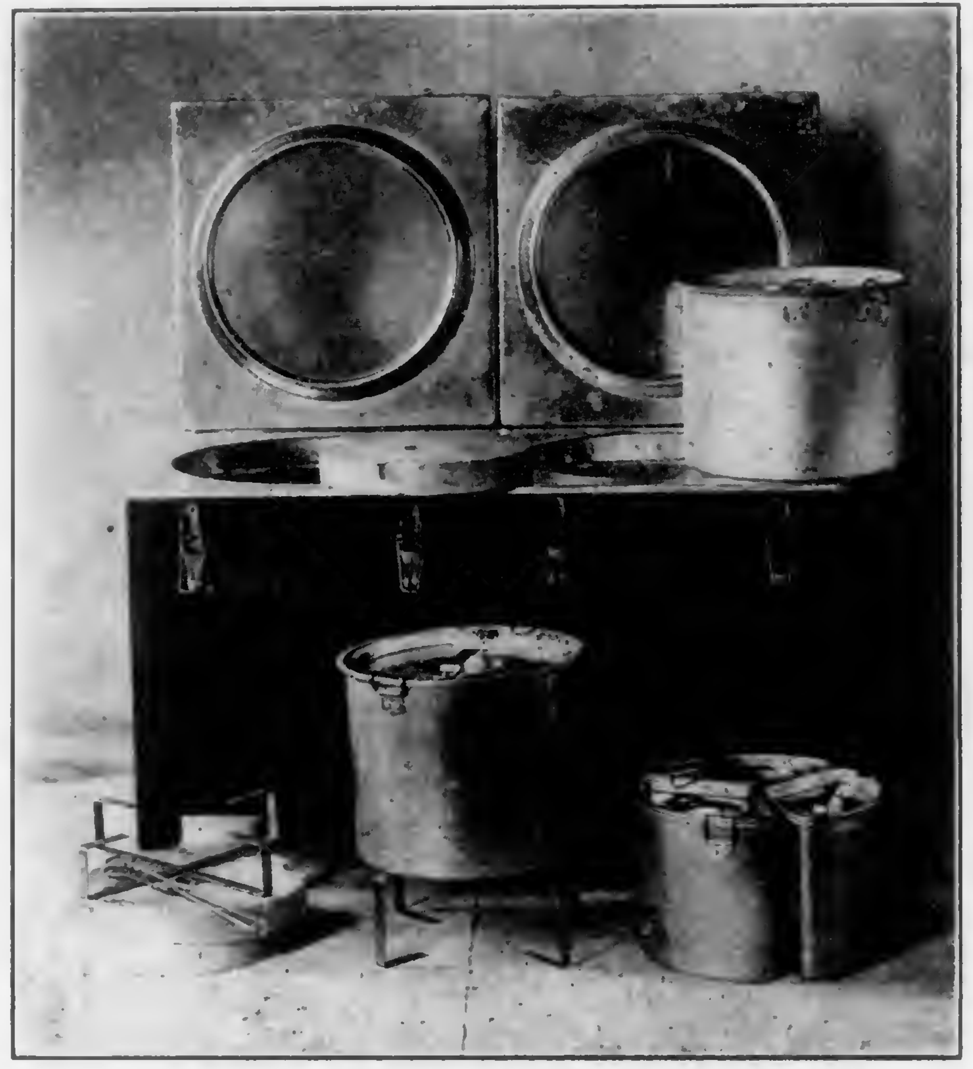
But apart from this enjoyable feature, with every other advantage in point of convenience and economic value, the fireless cooker has proved a most serviceable addition to any well-appointed kitchen for all-the-year-around use. Each year sees a more extended use of it, and when its true worth and faithful service are fully recognized and appreciated, the day is not far distant when it will take its rightful place among the indispensable kitchen furnishings. There is no evaporating process. For example, a roast cooked in an oven loses from one-half to one and one-half pounds in weight, whereas a roast cooked in a fireless cooker weighs about the same when cooked as before. Tough meats, which would not be at all palatable when cooked in an oven, are deliciously tender and toothsome when cooked in a fireless cooker.

The covers of the pot should not be lifted, after they are once adjusted, as the object is to retain the heat as long as possible. Of course, the food must be deposited in the fireless cooker in the vessel made for it, and this pan must be hot, for a large amount of heat must be generated and conserved for the best use of this utensil. When it becomes necessary to look at any food in the cooker without radiators, the kettle must again be put on the stove and brought once more to the boiling point, and not left in the cooker, for when the cold outside air strikes the food it will gradually become cold and the cooking will stop.

It is impossible to bake a roast in a cooker without the hot radiators. Any food to be boiled must boil at least five minutes before being set in place, and foods must be inserted at once after removing from the heat. Usually 15 to 25 minutes is ample time to heat a radiator, either metal or soapstone. To determine if a radiator is sufficiently heated, test it as you would a flatiron. After using a cooker for a few times you will have no trouble to determine the right amount of heat for the radiators for the different kinds of food.

It is important to know how to care for the fireless cooker. Instead of slamming the top down and pushing it into a corner or under the kitchen table the minute it is emptied, the lids should be left up as much as possible when the cooker is not in use, and the wells should be wiped out and allowed to dry and air thoroly in order to keep them sweet. If the cooker is kept tightly closed all the time the moisture will collect and a disagreeable flavor will be imparted to the food. The fireless cooker is an excellent thing for a family whose members can not have meals at the same time. One can take out half of the food and put the rest back and it will keep hot for hours.

A later article will give a few recipes for use with the fireless cooker which will serve as a guide to the beginner.



TYPE OF TWO-NEST FIRELESS COOKER.

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Strawberry-Currant Marmalade

A delicious marmalade can be made with strawberries and currant juice. To four quarts of strawberries use one quart of ripe red currants. The currants should be boiled and the juice pressed out as for jelly. Place the currant juice and the strawberries in preserving kettle and boil for about 30 minutes uncovered, then add four pounds of sugar. Boil about five minutes longer, then place in jars and seal. Strawberries and rhubarb canned together make excellent pies. Use only the tender, red ends of the rhubarb, and use half and half of each kind of fruit.

Mrs. Homelot—"Gracious, Anty Drudge! I'm ashamed to have you see my house! But the new calf got the colic, and I've been in the barn all morning. It's better now, and it won't take me long to clear away these dishes. They've been soaking in cool water and Fels-Naptha Soap."

Anty Drudge—"Lots of women would be tuckered out after nursing a calf through the colic. But I see you believe in making the best of things. Besides, you save your time and strength by doing things the easy way."

Women don't need to be tired out with their weekly washing nor housework if they do it the Fels-Naptha way, in cool or lukewarm water, with no hard rubbing and scrubbing.

Fels-Naptha Soap makes dirt disappear. It cuts the grease on pots and pans, and makes them shine. It cuts work in half, too, and does it better than it ever was done before, with less trouble.

Use Fels-Naptha Soap according to the easy directions on the Red and Green Wrapper.

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FLIES and mosquitoes, one of Clark's Fly Exits attached to screen lets them out, can't return thru exits. 10c ea., $1 doz. Dr. L. W. Clark, Carterville, Mo.

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The Daughter of David Kerr

By HARRY KING TOOTLE.

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PRECEDING CHAPTERS

The city of Belmont is a typical middle-western village, under the rule of the political "boss," David Kerr. The daughter, Gloria, had spent her girlhood away from home and knew nothing of her father's profession or business affairs. Supposing him to be a wealthy real estate merchant and a leader in Belmont society, she came home to take her place in the best circles of the town. To gratify her wish and continue the deception, David Kerr secretly secured the services of Judge Gilbert to introduce and assist Gloria in establishing herself in society. In return Kerr promised to give the full weight of his political influence to secure the passage of a questionable street railway franchise, the money coming from such influence going to Gilbert. Joe Wright, recent purchaser and editor of the Belmont News, met Gloria while traveling abroad. He had fallen in love with her before he was aware that she is the daughter of David Kerr. Since coming to Belmont he found that it was necessary to oppose the "boss" thru the News, and he took up the fight on the street railway franchise, the very measure which was purchasing the services of Judge Gilbert in Gloria's behalf. The opposition of the News to the franchise was the first big fight made against Kerr for years.

CHAPTER X (Concluded)

What Gloria could not understand was why Wright was avoiding her. In her ears she could hear him whisper as he had that night:

Spring on the hills, Beloved,
On the side of a meadowed slope:
And love in our hearts, Beloved,
Love and Spring and Hope.

Now was spring here, and hope and the promise of love, but he did not come. After her return from St. Louis she had waited in vain. Then she had asked to have him invited to dinner. When Mrs. Gilbert telephoned him he refused owing to press of business, but asked to speak to Gloria. She came to the telephone and they had a pleasant chat. He told her that he was busy finishing some magazine articles which the editor was pressing him for, and that he was working night and day. For the time being Gloria accepted the explanation. The day of their telephone conversation there came from him a box of red roses at the dinner hour.

One day at Locust Lawn a man engaged in digging the foundation for the new porch touched his hat and called Mrs. Hayes by name. She stopped to talk to him and betrayed a knowledge of his family affairs which astonished Gloria. After they had passed, the girl questioned her about the workman and how she came to know him.

"His wife came to the mission for help last winter when he was sick," Mrs. Hayes explained.

Gloria looked at the man in the trench, bending his back in pain that she might have a place to serve tea in the afternoon and loll in a swinging seat in the moonlight. He was but a unit out of those teeming millions of units to whose very existence she had always been indifferent. Had she been told in other days that this man's family had almost died of want she would have let it stay in her mind no longer than the news that a hundred poor girls had been burned to death in a fire-trap a bribed factory inspector had branded as safe. In other words, she would not have considered the matter at all. To have dominion over palm and pine to Gloria meant only that from these lands should be gathered the best there was for the lords of the earth. And of that order she knew herself to be one.

Sin and suffering were familiar to her in the abstract, sodden wretches she had seen invade even Fifth Avenue, but that back of all were stories of weaknesses, misfortunes, oppression, inhuman exploitation, and man's inhumanity to man she had not considered. She believed they were born into their caste just as she was born into hers.

Now as she listened to this workman talk, heard his story from Mrs. Hayes, learned that he had little children dependent upon him just as she had been dependent upon her father before he had made a settlement upon her, making her independent, Gloria began to realize that there was such a thing as the fellowship of man. She was not uncharitable. Whenever any appeal had been made to her she had always emptied her pocketbook thoughtlessly and considered her duty done. Now the thought of personal service came to her. She was ignorant of what she could do, even of its power to bring her any measure of happiness, but it was worth trying.

They had driven in silence almost to town before Gloria turned to Mrs. Hayes and said:

"Mrs. Hayes, the next time you go to the mission I want you to take me."

Several days later Gloria went with Mrs. Hayes to view at close range the work being done in the poorer quarters of Belmont by the Presbyterian Mission. She met Mrs. Wallace, the matron, and from her learned the story of the humble but unfortunate toilers, and the evils to which they were constantly a prey thru their ignorance and inability to protect themselves. Gloria then accompanied her on a round of visits, and soon the girl's interest was such that on the days Mrs. Hayes went to the mission she was glad to go with her.

The boss was disturbed at his daughter's trips into the lowest quarters of Belmont.

"This ain't no kind o' play, girl," he complained. "Why don't you stick to society?"

"Society!" she replied with fine scorn. "Why doesn't society stick to me!"

"What's the matter?"

He had been quick to catch the note of unhappiness. His daughter had not meant to say anything, but the words had slipped out before she could think. She now tried to erase the impression by saying:

"Matter? Nothing. Why?"

The boss's suspicions were not to be so lulled.

"You're keeping somethin' back from me, Gloria. What is it?"

"No, I'm not," she insisted.

"Has anyone done anythin' or said anythin' to you?"

"Nothing."

"But somethin's back o' all this. You ain't happy. Anybody can see that. Now, what's it all about?" He waited for her reply, but she would not speak. "Can't you answer?"

Forced into a corner, unable to turn the conversation, Gloria saw no way of escape, and finally stammered:

"It's—it's—well—it's just an atmosphere."

"You go every place."

"To all the big things, yes."

"People are nice to you."

She hesitated, but finally said, "Ye-es."

"Ain't they?"

"Oh, I suppose so," she admitted in a lifeless manner. "Perhaps I'm not used to western ways, yet the nice people look just like nice people look back East."

"What's different then?"

"They seem to keep me at arm's length. I don't see why. You're the biggest man in Belmont, and yet I-" She did not finish the sentence.

"Yet—I—what?" he urged.

"I don't understand, that's all."

"Who, for instance?"

Gloria thought for a moment, and resolved only to name persons in a general way.

"Well, Letty Loomis."

"Old John Loomis's daughter?"

"Is he the big wholesale grocer?"

"That's him. What'd she do?"

"I tell you—she didn't do anything. It's just—an atmosphere."

"Huh! A beautiful lot o' airs she's got a right to put on," snorted the boss. "D'you know how old Loomis made his money?"

"Out of groceries, didn't he?"

"Groceries, nothin'. That's just a stall. He's got a warehouse chuck full of rotten whiskey he sells in prohibition Kansas. That's his real business. He don't sell enough groceries in a year to feed a first-class boardin' house. I wouldn't let him sell anything to the poor farm. Don't let that girl o' his put it over you any. And they say he passes the plate in church! Gad, I hate a hypocrite. I'll make him sweat for it."

Her father was so wrought up that Gloria was afraid to speak further, but when he insisted she told of several instances of which she had been pleased to term antagonistic atmosphere, and in each case Kerr related some disgraceful characteristic of the head of the family. Once he did not hesitate to give his opinion of a society woman whose history he knew well. This intimate knowledge of Belmont affairs and his belittling references to leading citizens made Gloria reach the conclusion that in some way he was in a class by himself. This caused her to soothe him with the remark:

"Father, I think they're jealous because you're head and shoulders above them all."

She might not love him, but her pride in him and her loyalty to him were all the greater for the lack of love. She felt that she was at fault for not having that true filial regard which other daughters had for their fathers, and therefore whenever she could she strengthened her faith in him as Belmont's leading citizen. She was proud to be his daughter.

CHAPTER XI

On the day of his interview with McMinitry, Kerr had asked Kendall and Dr. Hayes to meet him at Judge Gilbert's office directly after luncheon. At this conference he intended to tell them they would have to acquire the News. The transfer of the property need not be made until after the election, but he wanted to know at once that it was his.

The boss was late, and the three men had to wait some time for him.

"I wouldn't want the boys to know it," said Gilbert disconsolately, "but I'm afraid he's got us beat."

Kendall was hopeful still.

"It's three days till election," he urged. "Anything can happen in that time."

"I wish I believed in miracles like you do," was Dr. Hayes's rueful comment.

"Only a miracle can save us," added Judge Gilbert gloomily.

"I tell you, gentlemen," insisted Kendall, "I still think Dave Kerr can swing it."

"All the same," answered the coroner, "when I went out to stick my good money in real estate options on factory sites I wish I'd been riding Balaam's ass."

The others' laugh at his expense was cut short by the entrance of David Kerr.

"How's it look, Mr. Kerr?" asked Gilbert.

"It might be worse," was the reply. "We count the votes, don't we?"

Gilbert was not optimistic.

"I'm afraid it isn't going to be that close."

"Have you heard anything from the eleventh?" queried Kendall.

"I had a talk with Sweeney this morning, and he said he could put enough stockyards people in the 'leventh to deliver the ward all right. Bauernschmidt was in my office at the same time. He's up against it in the sixth."

"Then we can't count on much outside the river wards," said Kendall.

Kerr nodded his head. He could have added that the river ward men would vote early and often, but that there was no occasion for it. It was an open secret that for several weeks floaters had been colonized in the levee district.

"We can't count on much besides them wards," explained Kerr, "unless the Belmont News goes out of business."

"What can we do about it?" inquired Hayes. He saw defeat staring them in the face.

"Sam," replied the boss after a moment's silence, "every man's got his price—in some form or other."

"News or no News, we've got to win," exclaimed Kendall desperately. "I've staked everything on it in Chicago and I must get results—and that means a franchise and nothing but a franchise."

"Then we've got to have that paper at any cost."

"It's mortgaged for all it's worth," said Gilbert.

"That won't help us in the next three days," snapped Kendall.

"There ain't no use mincing matters," concluded the boss. "We're up against it. There's only one thing to do; see what he'll sell for, and pay him his price."

Judge Gilbert looked at the matter from the point of view of a business lawyer.

"It won't be cash down for the whole thing. We merely assume the mortgage, and then pay him whatever he'll take to clear out."

Kerr had figured all this out. With him time was the most important consideration.

"We've got to get busy mighty quick," said the boss.

"When are you going to see him?" asked Kendall.

"Right away."

"We can't very well go to his office," said Gilbert. "Even that little move would give him more of an advantage."

"Get him over here," ordered Kerr. "Telephone him. He'll come. You needn't say who's here."

Judge Gilbert picked up the telephone on the table and asked Williams his secretary, who sat in the outer office, to get Mr. Wright at the Belmont News on the line for him.

Judge Gilbert's offices consisted of an outer room where sat his secretary; within, where Kerr and his lieutenants were in conference, was the library, a large room looking out on the main thoroughfare of Belmont; and from this, opposite the outer reception room, there opened two smaller rooms, one of which Gilbert used as his private office, the other as a room for consultations.

When Gilbert finished telephoning he said, "He's busy going over the proofs of some late stuff for this afternoon's paper, but he'll be over in half an hour or so."

(To be continued.)

Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., May 12, 1913.

Under limited receipts of choice goods and a good demand butter maintained steady values. Good eggs were sold at firm prices, but much of the stock was inferior and sold at a sacrifice. Dressed poultry was steady under a fair demand and light receipts. All vegetables sold slowly except potatoes, which were firm.

Butter.—Western creamery, 31c; extras, 29c; firsts to seconds, 27@28½c; special prints, 35@38c; near-by prints, 32c.

Cheese.—New York full cream, 17@17¼c; skims, 8¾@11c, according to quality.

Eggs.—Candled, 22½@24c doz.; extras, 21½c. Current receipts at $5.70 per standard case.

Poultry.—Fowls, 17½@18½c; old roosters, 12c; spring chickens, 30@32c; ducks, 13@14c; pigeons, 30@32c.

Dressed Poultry.—Western fowls, 18@19c; roosters, 14½c, chickens, 18@19c; turkeys, 20@25c.

Vegetables.—White potatoes, choice, 63@65c bu. Onions, 75c@$1.00 bag. Cabbage, $1.25@1.75 crate. Lettuce, $1.25@2.00 basket. Cucumbers, $2.00@3.50 basket. Celery, $1.00@1.50 bch. Spinach, $1.25@2.00 bbl. Kale, 25@50c bbl. Egg plant, $1.75@2.25 box. String beans, $2.00@3.50 bu. Peas, $2.50@3.00 basket. Peppers, $1.50@2.50 carrier. Tomatoes, $2.00@3.50 carrier. Watercress, $1.00@1.50 100 bchs. Asparagus, 6@15c bch. Beets, $2.00@5.00 per 100 bchs.

Fruit.—Apples, choice varieties, 25@75c hamper, $2.00@3.50 bbl. Cranberries, $1.25@2.00 crate. Strawberries, 10@15c qt.

Hay and Grain.—No. 1 timothy, new, $17.50@18.00; No. 2, $15.00@16.00; No. 3 do., $12.00@13.00. No grade, $8.00@10.00. Clover mixed No. 1, $13.50@14.00; No. 2 do., $11.00@12.00. No. 1 tangled rye straw, $13.50@14.00; No. 1 wheat straw, $10.00@10.50; No. 1 oat straw, $10.50@11.00. New shelled corn, No. 2 yellow, 63½@64c; No. 3 yellow, 62@62½c. No. 2 red wheat, $1.01@1.02; No. 3 do., 96@97c. No. 2 white oats, 42½@43c. Standard white, 42@42½c; No. 3 white, 41@41½c.

Hides and Skins.—Steers, abattoir, 15¼@16¼c.; do. country, 13¾@14¼c. Cows, abattoir, 14¾@15¼c; do. country, 12½c. Bulls, abattoir, 12¼@12¾c; do. country, 11½c. Calf skins, Nos. 5 to 12 and up, $1.35@2.45; do. green, 13@14c lb.

Seeds.—Timothy, $3.15@3.25 bu.; clover, white, $25; do. crimson, $6.25; do. mammoth, $14.50; do. sweet, $13.00; do. alsike, $13.25; red top, per bu., $13.50; alfalfa, $7.00@10.00; Canada field peas, $2.35; vetch, $8.50; rye, winter, $1.37; spring, $2.25; soy beans, $3.25; barley, $2.50; buckwheat, $1.50; cowpeas, $3.00@3.25; millet, $1.90@2.75; oats, $1.25.

Coffee.—Rio, 7s, 11½c; Santos, 4s, 13½c. Mild Coffee—Cordova, 11½@17c.

Provisions.—City beef, smoked and air dried, 22@23c. Beef hams, 31@33c. Pork, family, $21.00@22.00 bbl. Hams, cured, 14½@15½c; skinned, 14¾@15¾c; smoked, 17@18c. Other hams, smoked, city cured as to brand, 16@18c. Picnic shoulders, 10@10¾c; do. smoked, 12@12½c. Bellies in pickle, 15@16c. Breakfast bacon as to quality, 17@22c. Lard, refined, 11¾@12½c; do. in tubs, 11½@12c; do. kettle rendered, 11¾@12c. Tallow, prime city, 6¾c; do. country, 6¾c; do. dark, 5¾c; do. cakes, 7¼c.

Sugar.—Cut loaf, $5.15 cwt.; cubes, $4.60; powdered, $4.45; granulated, $4.35; standard granulated, $4.40; crystal A, $4.35.

Flour.—For 196 lbs., in wood, winter clear, new, $4.15@4.40; do straight, new, $4.50@4.75; favorite brands, $5.25@5.60. Rye flour, Penna., $3.50@3.75.

BALTIMORE PRODUCE

Baltimore, Md., May 12, 1913.

Under fair receipts and a good demand, butter remained steady thruout the week. Eggs are steady and choice stock is wanted at good prices. Live poultry remained unchanged. Fruits and vegetables moved slowly, altho there is a good demand for potatoes.

Butter.—Creamery, fancy, 30@31c; do., choice, 28@29c; prints and blocks, 30@32c; Maryland and Penna. rolls, 22@24c; prints, 21@22c. Process, 28@29c.

Cheese.—Flat, 17½c; Daisy, 18@18½c.

Eggs.—Md. and Penna., firsts, 18c; western, 18c; southern, 17c.

Live Poultry.—Hens, 17½c; chickens, 30@32c; old roosters, 11c. Ducks, 13@15c. Geese, 14@15c. Guinea fowls, 20@30c.

Dressed Poultry.—Turkeys, 24@25c; chickens, 20@21c; roosters, 11@12c; ducks, 20@22c; geese, 11@17c.

Vegetables.—Potatoes, white, 50@60c bu. Sweets, $3.00@3.50 bbl. Cabbage, $1.50@1.75 crate. Danish, $6.00@8.00. Onions, 35@40c bushel. Lettuce, 75c@$1.50 bushel. Egg plant, $1.75@2.25 crate. Peppers, $1.50@3.50 crate. Squash, $1.50@1.75 basket. Spinach, 20@25c box. Cucumbers, $2.50@3.25 basket. Beans, green, $2.75@3.25 basket. Celery, $2.50@3.75 crate. Turnips, 10@15c box. Cauliflower, $2.50@2.75 bbl. Horseradish, $1.50@1.65 box. Beets, 3@4c. Asparagus, $1.25@1.50 doz.

Fruit.—Apples, new, $2.00@3.50 bbl.; 50c@$1.00 bu. Strawberries, 8@15c qt.

Grain.—Wheat.—No. 2 red western, $1.09¾ spot, $1.08¼. Corn, spot, 59¾c; contract, 59¾c. Oats, No. 2 white 43@43½c; standard white, 42½@43c; No. 3 white, 41½@42c. Rye, 60@65c.

Hay and Straw.—No. 1 timothy, $18.50@19.00. No. 2 timothy, $16.50@17.00. No. 3 do., $13.50@14.50. Choice mixed, $15.50@16.00. No. 1 clover, $11.50@12.00. No. 2 do., $9.00@10.00. No. 1 tangled rye straw, $11.00@12.00. No. 1 oat straw, $9.00@10.00. No. 1 wheat straw, $8.00.

Millfeed.—Spring bran, $21.50@22.00; Middlings, flour to white, $26.00@28.00; western middlings, $22.50@23.00, city mills mids., $24.00@24.50.

NEW YORK PRODUCE

New York City, May 12, 1913.

Butter receipts were somewhat lighter than last week and under a steady demand the market had a firmer tone. Receipts of choice eggs are light and are wanted at good prices. Inferior stock is now hard to dispose of. Dressed poultry continues about as last week, altho fresh killed stock is scarce. Vegetables sold readily, except new potatoes, which were 50c lower.

Butter.—Creamery firsts to extras, 27½@29c; thirds to seconds, 26@27c; factory, 25@26½c; state dairy, 25@28½c; packing stock, 21@23c; process, 27@28c.

Cheese.—Whole milk, specials, 13¼@13½c; do. common to fancy, 12@13c; skims, 5@10c.

Eggs.—State and near-by, 21@23c; fresh gathered, 14@22½c; mixed, 19@20½c.

Dressed Poultry.—Turkeys, dry, 18@20c; chickens, Penna., 28@32c; fowls, 14@18½c; old roosters, 14½c; ducks, 15@20c; roasters, 19@22c.

Live Poultry.—Fowls, 18c; chickens, 18c; old roosters, 12½c.

Grain.—Easy. Wheat, No. 2 red, nominal. No. 1 Northern, $1.13. Corn, 64¼c. Oats, standard white, 43½c.

Vegetables.—Potatoes, state, $1.75@1.90 per 168 lb. bag. Cabbage, $1.25@1.50 crate. Green beans, $2.00@2.50 basket. Carrots, 50@75c bag. Cucumbers, 50c@$1.00 dozen. Lettuce, $2.00@3.50 bbl. Squash, 75c@$1.25 basket. Celery, $1.00@4.00 case. Horseradish, $1.00@3.00 cwt. Parsnips, 50@75c bbl. Turnips, 35@75c. Watercress, $1.00@1.50 per 100 bunches.

Fruit.—Apples, $1.75@4.00 bbl., according to variety. Strawberries, 7@15c qt.

BUFFALO PRODUCE

Buffalo, N. Y., May 12, 1913.

Butter.—Steady. Creamery, choice, 29c; choice dairy, 26@27c.

Cheese.—Steady. Fancy, 17½@18c; good, 16@18½c.

Eggs.—Firm. State, fresh, 22@23c; western, 18@19c; mixed, 20@21c.

Dressed Poultry.—Active. Turkeys, per lb., 22@24c; fowls, fancy, 17@19c; chickens, 16@20c; old roosters, 14@15c; ducks, 21@24c; geese, 17@18c.

Live Poultry.—Steady. Chickens, 15@18c; ducks, 21@22c; geese, 15@17c; turkeys, 22@23c; old roosters, 13@14c.

Vegetables.—Potatoes, firm. Home-grown, 58@60c bu. Cabbage, $1.90@2.50 crate. Onions, 60@75c sack. Beans, green, $3.50@5.00 hamp. Turnips, 75@80c bbl. Celery, 50@75c doz. Spinach, $1.25@1.50 bbl.

Beans.—Quiet, steady. Marrow, fancy, $3.35@3.40; medium, $2.30@2.50; red kidneys, $2.00@2.25.

Fruits.—Apples, $2.25@3.00 bbl; 50@75c bu.

Honey.—Firm. No. 1 fancy, 16@17c; No. 2 new, 13@15c; dark, 12c.

Hay.—Firm. Timothy, choice, on track, $17.00@18.00, No. 2 do., $16.00@17.00; No. 3, $14.00@15.50; light mixed, No. 1, $13.00@14.00; rye straw, $10.00; oat and wheat straw, $9.00@9.50.

Feed.—Steady. Spring bran, $21.00 ton. Standard mids., $25.50. Corn meal, $24.50. Gluten, $24.50. Hominy, $24.00. Oilmeal, $27.50. Cottonseed meal, $32.00.

YORK PRODUCE

York, Pa., May 12, 1913.

Market conditions were unchanged for the week. Eggs were off one cent. There is a great scarcity of early market truck, owing to the continued cold weather of the latter part of April and May. Strawberries are coming in large quantities, but of inferior quality, from 5 to 15 cents. A frost on Saturday night, May 10, destroyed much market truck, as tomatoes, beans, potatoes, etc., while Sunday night gave a very severe frost, completing the destruction of the remainder of the grapes, berries, potatoes, etc.

Butter.—Country, 33@35c; separator, 33@36c. Milk, 6c per qt.

Eggs.—18@19c.

Poultry.—Hens, 15c lb. Dressed poultry, 45@90c each.

Vegetables.—Potatoes, 8@10c half peck; 45c@60c bu.; cabbage, 2@6c each; lettuce, 3@8c; beets, 3@5c bch; radishes, 3@6c; onions, 3@4c bch.; lima beans, 10@14c qt.; soup beans, 7@10c qt.; sweet potatoes, 12@15c per ½ pk.; parsnips, 10c per ½ pk.; sauer kraut, 5@7c qt.; lard, 12@15c lb.; celery, 3@7c; rhubarb, 5c bunch; asparagus, 5@7c bunch.

Fruit.—Apples, 15@30c a half peck; strawberries, 5@15c box.

Retail Grain Market.—Wheat, $1.16; corn, 75c; oats, 50c; bran, $1.15 a cwt.; rye, 65c; middlings, $1.35 a cwt.

Wholesale Grain Market.—Wheat, $1.06, corn, 62c; oats, 39c; rye, 55c.

WILMINGTON PRODUCE

Wilmington, Del., May 12, 1913.

Fruits.—Apples, 50@80c basket; $2.50@4.00 bbl. Strawberries, 11@18c box.

Vegetables.—Potatoes, 65@75c bu.; new, $4.25@6.00 bbl. Cabbage, $2.00 crate; 25c bas. Onions, 40c bas. Celery, 60@85c doz. Spinach, $1.25 bbl. Sweet potatoes, 75c@$1.25 basket; $2.50@3.50 bbl. Kale, $1.25 bbl. Lettuce, $1.50 basket. Asparagus, $1.50@2.00 doz.

Poultry.—Chickens, live, 18@20c.; do., dressed, 20@22c. Ducks, 13@14c lb., dressed, 20c.

Eggs.—19@21c.

WASHINGTON PRODUCE

Washington, D. C., May 12, 1913.

Eggs.—Near-by, fresh, per dozen, 19c; southern, per doz., 18c.

Cheese.—New York, new, per pound, 16½c; flat, 16½c.

Butter.—Best prints, per pound, 32c; tub, 31c; process, 29c; undergrades, 25c.

Live Poultry.—Hens, per lb., 17@17½c; roosters, 10c; springers, 30@32c; turkeys, 16@17c; geese, live, 10@12c; ducks, 16@17c.

Vegetables.—Potatoes, bbl., $1.00@1.50, 50@70c bu. Onions, $1.00@1.25 crate. Lettuce, per basket, 75c@$1.25. Beans, $2.25@3.50 basket. Peppers, per crate, $1.50@2.50. Egg plants, per box, $2.00@3.00. Squash, per bbl., $1.50@2.25. Beets, $1.50@2.00 per 100 bchs. Mushrooms, per lb., 25@40c. Carrots, 2@4c bch. Cabbage, $1.25@1.75 crate. Radishes, 50c@$1 per 100. Cauliflower, $1.00@2.00 crate. Asparagus, $1.25@2.50 doz. Apples, $1.50@4.50 bbl. Strawberries, 10@15c box.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., May 12, 1913.

The cattle market during the past week was weak and a shade lower on the top grades.

	Beef Cattle	Sheep and Lambs	Hogs
Total for week	3,091	11,291	4,328
Previous week	3,815	10,610	4,180

Best steers	$8.40@8.50
Choice steers	8.30@8.40
Good	8.00@8.25
Medium steers	7.75@8.00
Common steers	7.25@7.50
Bulls	6.50@7.25
Fat cows	4.50@6.50
Thin cows	3.00@3.75
Milk cows	40.00@65.00

Veal calves steady.

Best calves	$9.50@10.00
Good to choice do.	9.00@9.50
Medium	7.00@8.00
Common do.	6.50@7.00
Thin do.	5.00@8.00

Sheep and lambs are steady.

Extra wethers	$6.00@6.25
Choice wethers	5.50@6.00
Good wethers	5.00@5.50
Common to medium	3.00@5.00
Ewes, fat	5.00@5.50
Extra lambs	9.25@9.50
Good to choice do.	9.00@9.25
Common to medium	6.00@8.50
Early spring	4.00@6.25

The hog market continued steady thruout the week at $12.00@12.25.

City Dressed Stock.—Choice classes of dressed meats are steady. Trade is normal. Steers, 13@14c; heifers, 10@18c; cows, 8@11½c. Veal calves, 14@16c; country dressed calves, 14@15c; extra do., 15½c. Sheep, 11@13c; extra wethers, 14c. Spring lambs, 16@17c. Hogs, 12¼@12½c.

PITTSBURGH LIVE STOCK

Pittsburgh, Pa., May 12, 1913.

The market ruled slow last week at about steady prices on medium to choice cattle, and stronger on tidy light weights. Fat cows and bulls were in liberal supply and lower. Best fresh cows were strong. With 70 loads on sale today heavy grades were steady and 10 cents higher, while other grades were stronger.

Good to choice	$8.50@8.70
Good, 1300 to 1400 lb.	8.30@8.40
Medium to good, 1200-1300 lb.	8.20@8.35
Tidy, 1050-1150 lb.	8.10@8.25
Fair to medium, 900-1100 lb.	7.75@8.00
Common to good fat oxen	5.00@7.00
Common, 700-900 lb.	6.00@7.25
Common to good fat bulls	5.00@8.00
Common to good fat cows	4.75@7.25
Heifers, 700 to 900 lbs.	5.50@8.00
Bologna cows	4.00@4.40
Fresh cows and springers	20.00@80.00

Veal calves were in fair supply and sold steady all last week. Arrivals totaled 800 head today and prices remained steady.

Heavy and thin calves	$4.50@6.50
Veal calves	7.00@9.50

Hogs were in liberal supply all of last week, and closed from 10 to 15 cents per cwt. higher on all grades. Receipts numbered 35 double-deck loads today. The market was strong at an advance.

Prime heavy	$8.70@
Prime medium weights	8.80@
Heavy mixed	8.75@
Best heavy Yorkers	8.80@
Light Yorkers	8.80@
Pigs as to quality	8.70@8.80
Common to good roughs	7.25@7.75
Stags	6.00@6.50

Sheep and lambs have been in liberal supply and good demand. Prices, however, have gone down from 15 to 25 cents per cwt. Only 35 double-deckloads were received today. Spring lambs were steady and in fair supply. The market was active on choice sheep and steady on others.

Prime wethers, clipped	$5.60@5.75
Good mixed	5.25@5.40
Fair mixed ewes and wethers	4.50@5.00
Culls and commons	2.50@3.50
Spring lambs	7.00@10.00
Culls to choice lambs	4.00@8.00

BUFFALO LIVE STOCK

Buffalo, N. Y., May 12, 1913.

Cattle receipts today were 135 cars. There was a fair supply of cattle all last week with a fair demand. The week closed steady on the fair grades but dull on common kinds. The market was generally steady on all grades today.

Choice heavy steers	$8.40@8.65
Medium	7.25@8.50
Yearlings	8.50@8.75
Plain heavy	7.75@8.00
Handy butchers	7.00@8.40
Good to choice fat cows	6.00@7.25
Good to choice heifers	7.25@8.10
Butcher bulls	7.00@7.50
Feeders	6.00@7.60
Stockers	7.00@7.55
Cows and springers	40.00@85.00

The calf market was irregular all last week and prices were lower. The close of the week brought an active market and higher prices. Today's arrivals totaled 1,700 head.

Choice veals	$9.00@9.25
Light and thin	4.00@6.50

Sheep and lambs were slow and lower the first of last week. All the good stuff was cleaned up at the close and prices were higher on good grades. Wethers are dull and lower. Mixed sheep and ewes are slow and 10 cents lower. Receipts today were 90 cars. The market was steady.

Clipped lambs	$7.75@8.00
Poorer grades	6.00@6.50
Yearlings	6.75@7.00
Wethers	5.75@6.10
Ewes	4.75@5.25
Sheep	5.25@5.50

Hogs held steady thruout all of last week. With 80 cars on hand today the market showed an advance of 5 to 10 cents per cwt.

Heavies	$8.75@
Mixed and medium	8.80@
Yorkers	8.75@8.80
Light Yorkers	8.75@8.80
Pigs	8.85@
Roughs	7.25@7.50
Stags	6.50@7.25

BALTIMORE LIVE STOCK

Baltimore, Md., May 12, 1913.

Beef receipts for the week were 1,337 head. The market is steady.

Steers	$7.00@8.40
Heifers	5.00@7.50
Cows	3.50@6.25
Bulls	6.00@7.25
Fresh cows	27.50@77.50

Sheep and lamb receipts were 3,481 head. Under a fair supply the market is steady on lambs and lower on sheep.

Sheep	$2.50@6.00
Lambs	5.50@9.30
Spring lambs	8.00@10.00

There were 10,811 hogs on sale during the week. Under a liberal supply the market is lower.

Light western	$9.00@9.50
Heavy to medium	8.90@9.00
Near by	8.90@9.00
Pigs	8.75@9.00
Roughs	7.00@8.25

Calf receipts for the week were 496 head. Most of the receipts were of unattractive stock, and under a light supply the market is steady at $5.50@10.00.

NEW YORK LIVE STOCK

New York City, May 12, 1913.

Cattle receipts for the week were 3,268 head. The market is irregular.

Steers	$6.00@8.75
Bulls	5.50@7.75
Cows	3.50@6.75

Dressed beef steady. Native sides, 11½@13½c.

Calf receipts were 7,638 head. The market is steady.

Choice veals	$7.50@10.00
Good veals	6.00@7.50
Culls	6.00@7.00

Dressed calves are steady

City-dressed veals	13@15½c
Country-dressed veals	10@13c

Sheep and lamb receipts were 9,317 head. Sheep are strong and lambs steady.

Clipped sheep	$4.00@6.00
Unshorn lambs	7.25@9.25
Clipped lambs	6.50@8.40
Spring lambs	8.00@10.50

Hog receipts were 6,476 head. The market is higher at $8.80@9.00.

ELGIN BUTTER QUOTATION

Elgin, Ill., May 12, 1913.

The quotation committee of the Elgin Board of Trade this afternoon declared butter firm at 28c a pound.

NEW YORK MILK QUOTATION

The wholesale milk price is $1.51 per 40 quart can for class C; class B, $1.61.

PITTSBURGH HAY AND GRAIN

Pittsburgh, Pa., May 12, 1913.

Hay receipts have been very light, and mostly of poor grades. Such stock is not wanted and can not be sold at satisfactory prices. Good timothy is scarce and wanted at high prices. Altho the demand for straw has improved, the receipts are still in excess. No. 1 timothy, $16.00@16.50; No. 2 do., $13.00@14.00; No. 3 do., $10.00@12.00; No. 1 light mixed, $13.00@13.50; No. 1 clover mixed, $13.00@13.50; No. 2 do., $9.00@10.00. No. 1 clover, $12.00@12.50. No. 2 do., $7.00@10.00. No. 3 prairie, $10.50@11.00; No. 4 do., $8.00@9.00; No. 1 oat straw, $9.00@9.25; No. 2 do., $8.75@9.00. No. 1 wheat, $9.00@9.25; No. 2 do., $8.75@9.00; No. 1 rye, $11.00@11.50; No. 2 do., $9.50@10.00. Ear corn arrivals are in strong demand. Market stronger. No. 2 yellow, 65@66c; No. 2 high mixed, 63@64c. Shelled corn receipts are in excess of the demand. No. 3 yellow natural, 61@61½c; sample, 58@59c. Oats are in fair demand and the market is weak. No. 2 white, 40@40½c; standard, 39@39½c; No. 3 do, 37@38c; No. 4 do., 35@36c. The demand for middlings is very slow. Market dull. No. 2 white mids., $23.75@24.25; No 1 bran, coarse, $21.75@22.25; do., medium, brown mids., $20.75@21.25. Winter wheat mids., $20.50@21.00.

TOBACCO MARKET

Lancaster County is the greatest agricultural county in the United States, with 10,835 farms, all but one of which contains less than 1,000 acres. The total value of all farm property is given at $84,426,807. The total acreage of tobacco in 1910 (census year) was 32,783 acres, as compared with 80,825 of corn, 20,093 of oats and 115,568 of wheat. While tobacco occupies fewer acres than the other crops, it is easily the most important, as it represents far more effort per acre.

Late reports indicate that the acreage of tobacco in the state will be considerably less than last year, altho it can not be said how much the acreage will be. The condition of the young tobacco plants is now considered good, the only adverse condition being the work of snails, which is now thought to be less serious than at first reported. Farmers are now removing weeds from plant beds, and in some localities, owing to drouth, it has been necessary to sprinkle. Tobacco land is being made ready, and with favorable growing conditions transplanting will be well under way by the close of the month. Much commercial fertilizer is being used, being generally of the higher grades.

Local market conditions are practically unchanged. The very small part of crop that remains is being slowly taken at steady but somewhat low prices, as all will agree. Prices range from $5 to $7 per cwt for crop lots. The general tobacco market is reported as in a healthy condition, especially from the viewpoint of buyers. Farmers, however, feel that they should have better prices and look with much hope upon the prospect of local and general organization. The interest that is being shown in the cultivation of Havana tobacco in Pennsylvania is attracting much attention, and the outcome will be watched with general concern. Some of the other cigar tobacco sections, including prominently that of the Connecticut valley, report a probable increase in acreage of seed leaf but a sharp decline in that of Havana.—H. E. Tweed, May 12, 1913.

Seed Corn and Tomato Plants.—Now is the time when late planters are looking for reliable seed to finish the season's seeding. The Walter P. Stokes Company of Philadelphia reports a banner year in the seed business, but it still has some choice seed corn for sale subject to being unsold when order arrives. The supply includes a quantity of Improved Leaming at $1.50 per bu.; 100 Day Bristol at $1.65; Red Cob Ensilage at $1.60; and Special Ensilage at $1.50. The sample of 100 Day Bristol is the finest ever handled. This company is also conducting a great sale at present on vegetable plants, particularly Bonny Best Early Tomato. These plants are grown in the company's near-by greenhouses, and are of the highest quality. Here is an opportunity for any who have found their supply short on these seeds or plants. An early order will bring what you want. Address Walter P. Stokes, Dept. 128, 219 Market St., Philadelphia, Pa.

Hominy Feed for Hogs.—Bulletin 1?5 of the Perdue Experiment Station, at Lafayette, Ind., discussed the merits of hominy as a hog feed. It states: "Hominy feed must be considered as a substitute for, and not a supplement to corn. Hominy feed, like corn, should be supplemented by some feed high in protein content, such as tankage, linseed oil meal, shorts, milk, etc., in order to secure the most rapid and most economical gains. Hominy feed produces more rapid gains on hogs than does corn meal. As a general rule, the high cost of hominy feed hinders its more general use as a hog feed and prevents its economical substitution for corn, except where the latter is very high in price.

Veterinary

(Conducted by W. C. Fair, V. S.)

(Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also name and address of writer. Initials only will be published. When reply by mail is requested, it becomes private practice, and a fee of $1 must accompany the letter. This is one of the most valuable columns of the paper and we invite readers to make use of it. Clippings from this column, when properly preserved and classified, would make one of the most valuable medical symposiums a farmer-stockman could obtain.)

Splint Lameness.—About a year ago my 1,500-lb. horse went lame in left hind leg. There is a bunch on shin midway between ankle and hock joint. This bunch is about the size of a hickory nut. J. B. D., Fillmore, N. Y.—I am inclined to believe that your horse has a splint on hind shin which perhaps interferes with the action of suspensory ligament. Apply 1 part red iodide mercury, 1 part iodine and 8 parts fresh lard, once a week. The one side of foot may be higher than the other; if so, lower this side under bunch.

Enlarged Thyroid Glands.—My four-day-old colt has two lumps, size of walnut, one on each side of wind pipe, pretty close together. I noticed these enlargements when the colt was one day old, but he is lively and does not appear to be sick. I have been a subscriber to Pennsylvania Farmer since 1884, and wish it success under its new management, which I think is a great improvement. I. C., Meadville, Pa.—You need not worry about your colt for he will soon get all right. Give him 2 grains potassium iodide at a dose in a little milk, twice a day, until the glands reduce to normal size. If they do not yield to this treatment, increase the dose. Painting the bunches with tincture of iodine will also reduce them.

Suppurating Knee.—I have a cow with a bunch on her knee which occasionally breaks open but seemingly heals. The knee seems to inflame about so often, then break. J. H. J., Alverson, Pa.—Apply 1 part iodine and 5 parts fresh lard to entire knee joint every day or two. If the bunch opens again, apply tincture iodine to center once a day and examine with a view of finding foreign body in knee.

Barren Sows.—I have two large Berkshire sows that come in heat regularly and are served, but fail to get with pig. They have no vaginal discharge, and appear to me as if they were in perfect health. I do not over-feed them and they are not unusually fleshy. H. L. H., Red Line, Pa.—Four hours before they are served, inject them with a soda solution, made by dissolving 1 oz. bicarbonate soda in a pint of water.

Warbles.—I have a cow, two years old, that has several hard lumps on back. These bunches have been on for several weeks, but the cow appears to be well. What treatment would you suggest? B. T. G., Tidioute, Pa.—The bunches you mention are warbles that have not yet matured. The skin should be opened and the grub squeezed out and killed; then apply boracic acid to wound, once a day. On the small bunches apply iodine ointment every day.

Warts.—Are warts contagious? One of my heifers is troubled with warts on neck and head, which I fail to get rid of; now another cow seems to be troubled with them, and I am at a loss to know what to do for them. Any treatment you suggest will be appreciated. B. W. R. Meadville, Pa.—When they are small and have a neck, they should be snipped off with scissors or a sharp knife. The flat ones should be dissected out and the wound touched with nitrate of silver. Large warts are always well supplied with blood, therefore it is sometimes necessary to either tie the artery or sear it with a hot iron to stop bleeding. Warts will very often disappear if they are kept well oiled and softened with olive oil.

Rabies.—Two of my hogs died recently, and during their sickness were inclined to fight other hogs and would bite at a stick or whip whenever they had an opportunity. They also showed symptoms of paralysis and acted quite strange. They refused feed and water. B. R. C., Fillmore, N. Y.—I believe that a mad dog has bitten your hogs, and if so there is no remedy. You should separate the sick from the well ones as promptly as they show the first symptoms.

COUNTY NOTES

Luzerne Co., Pa. (E. C.), May 5.—Weather fair and cold with a few frosts. Live stock rather scarce. Winter grain looking good. Oats, 45c; wheat, $1; rye, 80c; potatoes, 55c; corn, 80c; timothy hay, $18 ton. Farm work advancing fairly well.—N. C. Brown.

Warren Co., Pa. (N. W.), May 1.—Weather hot. Live stock of all kinds scarce and high. Meadows looking well but have not started much yet. Not much stock on pasture. Oats about half sown. Lots of lime being used this year.—Clyde Firth.

Delaware Co., Pa. (S. E.), May 2.—Weather mild, following heavy rains. Good pasture and stock in good condition. Oats, 47c; corn, 68c. Poultry scarce and rather high. Big demand for heifers at good prices. Oats and potatoes are all in. Peach crop almost a total failure in this section.—Chester W. Ambler.

Harford Co., Md. (N. E.), May 3.—Weather clear and warm; fine growing weather. Great demand for dairy cows, which are bringing from $45 to $80. Hogs high and scarce, six-weeks-old pigs bringing $3 to $4 each. Wheat and grass looking well; clover a good stand where sown in August alone, but a poor stand where sown with wheat. Farmers very busy preparing their ground and planting corn, spraying apple trees for fruit and making gardens.—D. G. Harry.

York Co., Pa. (S. E.), May 5.—Weather warm, with considerable rainfall. Fat steers scarce and high. Fat cows, 6c lb.; fresh cows, $75 to $100 head; chickens, live, $1.25 to $1.50 pair; wheat, $1.06 bu.; corn, 62c bu.; potatoes, 45@50c bu.; butter, 34@38c lb.; eggs, 18@19c doz. Plowing all done. Oats all sown. Potatoes nearly all planted. Some farmers are getting ready to plant corn, while others are planting.—Clarence D. Emig.

Ocean Co., N. J. (C.), May 5.—Weather fair. Prices continue about the same. Crops are looking good. Frost of 20th killed the peach crop and most of cherries. Some potatoes about four inches high. Come corn planted and most ground will be ready this week.—C. M. Rorer.

Venango Co., Pa. (N. W.), May 2.—Weather fine for farming. Some frost at night. Live stock in good condition. Prices of stock is high and stock is scarce. Winter crops looking well. Oat planting in full sway; acreage normal. Potatoes, 50c bu.; apples, $1 bu.; butter, 35c lb.; eggs, 20c doz.; hay, $18 ton. Farm work well along and crops are being planted in good condition. General conditions are above the average.—W. J. Pringle.

Steuben Co., N. Y. (S. W.), May 1.—Weather fair; heavy rain first of week. Live stock looks good. Cows are selling at from $65@75 each; butter, 33c at store; eggs, 18c. Some hay not sold, price $8 to $12; pigs, $4 each. All kinds of meat high. Veals, 8c; live hogs, 9c. Work is moving along slow on account of rain. Oats not more than half sown.—G. W. Rowley.

Chester Co., Pa. (S. E.), May 3.—Weather clear and balmy after a long wet spell. Stock high. Calves and milk cows scarce. Beef high. Crops are good. Wheat is rank. Oats and potatoes mostly planted. Corn is being planted. General farm conditions are good. Work is well along. Grass looks good after nearly a week of wet weather.—Hayes C. Taylor.

Wayne Co., Pa. (N. E.), May 2.—Warm and pleasant. Stock in fine condition; some in pasture. Feed getting cheaper. Butter, 42@44c lb. Horses and cattle very high. Small pigs, $7 per pair. Everyone busy building fence and fitting oat ground. Many peas are being sown.—E. W. Carl.

Lancaster Co., Pa. (S. E.), May 9.—Fair and cool at present. Live stock is in good condition and brings good prices. Wheat is growing and looking good. Oats are planted and coming up. Potatoes are planted and coming up. Corn is being planted. Grass is looking fair. A week's wet weather in April held the farmers back somewhat. They are busy getting the corn planted. Roads are being put in good condition. —J Henry Haverstick.

Farmers' Annual Normal Institute.—The spring meeting of the Farmers' Annual Normal Institute and State Board of Agriculture will be held in the Town Hall, Washington, Pa., May 20-23, 1913. An interesting and instructive three-day program has been arranged. For program and full particulars address Hon. A. L. Martin, Director of Institutes, Harrisburg, Pa.

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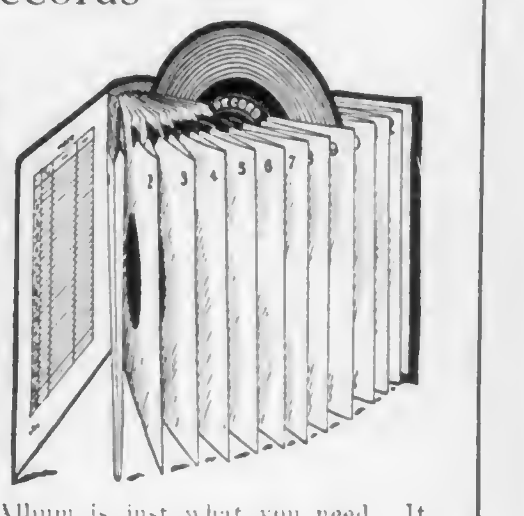

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BUCKS COUNTY TO HAVE FARM BUREAU

A movement has been started among the farmers of Bucks County to secure the organization of a county farm bureau, with a farm counselor in charge. Present effort is directed toward securing the co-operation of county granges and farmers' clubs in the movement.

Bucks County farmers are located advantageously between the great markets of Philadelphia and New York, with the smaller markets of Trenton, Easton and Bethlehem close at hand. Transportation facilities are unexcelled. Despite all these advantages it is evident that Bucks County farmers are not taking full advantage of their superior facilities. To stimulate them to do so it is believed an accessible central farm bureau would be a powerful agency, besides fulfilling the office of a farmers' information bureau.

The matter of establishing this bureau will be put up to the granges and farmers' clubs at their next monthly meetings, and strong efforts will be made to secure their endorsement of the plan. It is realized that, single handed, these organizations are unable to cope with the larger farm betterment movements, but it is believed that by co-operation of granges and clubs much progressive work could be accomplished thru the farm bureau.—D. T. H.

NEW BULLETINS

Guinea Pigs.—So much interest has recently been shown in the guinea pig industry that we are glad to announce Farmers' Bulletin 525 of the Department of Agriculture, Washington, D. C., entitled, "Raising Guinea Pigs." This bulletin explains the various types, breeding, feeding and general care of guinea pigs, both for pets and as a commercial business. It should prove valuable to those who are interested in this work.

Cost of Milk Production.—Farmers' Bulletin 522 of the Department of Agriculture, Washington, D. C., contains brief discussions of the following subjects: Still for alkali water, draining wet soils, marrow cabbage, beef cattle in the South, poultry raising, cost of producing milk, milk powder starters, sheep branding paints, co-operation among fruit growers. As to the cost of producing milk, it was found that the cost of feed was $95.73, or 3.04 cents per quart. Expenses were $70.22, or 1.76 cents per quart; supervision, however, is not included in this account.

Pecan Culture.—So much misunderstanding relative to pecan culture has followed the many pecan orchard developments of recent years that Circular 112 of the Department of Agriculture, Washington, D. C., is most timely. It thoroly discusses the pecan situation from a commercial standpoint and states: "Pecan orchards demand the same intelligent care as other orchards. The pecan is often subject to serious injury by numerous insects and diseases, and is also much affected by unfavorable weather. Ordinarily, commercial returns are not to be expected until the trees are 10 to 12 years old, and the length of time trees will continue to bear is conjectural."

Pasteurizing Milk at Home.—Methods for home pasteurization of milk and cream, together with suitable apparatus for the procedure, are discussed in Bulletin 39 of the Nebraska Experiment Station, at Lincoln, Neb. This bulletin says: "If there is no objection to the slightly cooked flavor, the process of pasteurizing (heating the milk or cream) need not be so carefully done. All that is necessary is to place the milk or cream in a double boiler and bring it to the scalding point, and immediately cool. This process will kill germs present fully as effectually as other methods described. The only objection is the fact that some physicians believe that milk that has been heated to the scalding point is rendered slightly less digestible than if carefully pasteurized at a lower temperature and for a longer period of time, as previously suggested." Other and more elaborate methods of pasteurization are also discussed in this bulletin.

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ESTABLISHED 1880 PUBLISHED WEEKLY

VOL. 33.—No. 21. PHILADELPHIA, PA., SATURDAY, MAY [illegible]913. 50 CENTS A YEAR.

Headle Dr. T J c313
Rutgers College

Improving the Corn Crop

By D. T. HENDRICKSON,
Monmouth Co., N. J.

In the summer of 1907, I determined to find out if something could not be done to improve the corn crop upon our farms. First, I made up in my mind what my ideal of a perfect corn crop should be, and, second, I decided to find out all I could from the experience of others in what ways this ideal might be realized. We had that year upon our farms a field of corn, containing about 21 acres of land. The soil of this field is a deep, rich, warm sandy loam, and has probably been in cultivation for two centuries or more. This field had been in grass in 1905 and 1906, and the sod had been turned under very early in the spring of 1907. It had then been gone over three times with a disk harrow, marked off with a furrowing sled in hills 3 feet apart each way; fertilizer at the rate of 600 pounds of the acre had been applied by sowing a little in each hill, and the corn was planted during the second week in May, four grains in each hill. The germination was good, weather conditions very favorable, the usual methods of cultivation employed, and taken altogether, our prospects were more than good for a bumper corn crop.

PLANTING CORN WITH A MODERN MACHINE PLANTER.

In July of that year, a little leisure time afforded me a brief opportunity of looking over farms in near-by sections, and among places visited were the counties of Northampton, Bucks, Berks, Chester, York and Lancaster, in Pennsylvania. Despite the vaunted greatness of my own county of Monmouth along agricultural lines, I saw corn fields here and there that were far in advance of anything we had at home. Upon inquiry I learned that in nearly every instance the owners of these fine fields had paid not a little attention to selecting their seed corn, and in a few cases, the most successful corn grower in the locality was furnishing all the seed used by his neighbors, and he was getting a fancy price for it, too. Further investigations convinced me that the careful breeding of seed corn was the key to success.

I now formed my ideal—ears of corn averaging 12 inches in length and weighing a pound and a half; stalks 10 to 12 feet high and a yield of 65 bushels to the acre. And ears, also, whose tips should have corn well rounded over end, and whose butts should not be too small, since the corn might break off from the stalk in the wind or be choked by not getting enough nourishment. For the purpose of comparison, I carefully selected from our 21-acre field 12 of the best ears I could find, and I entered them in a near-by exhibition. The variety was the yellow Dent, which for our soils there seems to be no better. At this exhibition, I carefully compared my corn with others, and noted every detail—length, fullness, straight or crooked, slimness of cob, depth of grain, etc. While my exhibit was a long ways from my [illegible], nevertheless I secured third prize.

My corn crop was to be improved by a process, which, altho it seemed slow and laborious, was somewhat sure. Yellow Dent is the best corn ever grown by Monmouth County farmers, and my plan was to improve upon that already growing in my own field. My attention had been previously called to the following paragraph from a bulletin of the Nebraska Station: "When corn grown in one section for a number of years is moved to another section where soil and climate are different, the plant always undergoes more or less change during the first two or three years before it becomes 'adapted' to its new conditions." This statement clinched the argument and kept me from purchasing seed corn from western seedsmen, whose claims were for a 100 bushels per acre crop. I would use my own seed.

PROPER CULTIVATION AT THE RIGHT TIME IS ONE OF THE FINE ARTS IN CORN GROWING.

Before we cut up our corn that fall (1907) I went thru our field and marked those hills that were to be kept for seed. I kept right up to my ideal, and I marked no hill whose stalks were under 12 feet and whose ears were under 12 inches. When the corn was cut up, these marked hills were left, and when the grain was well hardened, the ears were husked out standing. Of course, care was taken to do this before freezing weather.

My seed corn, thus selected, was carried thru the winter in the following manner, and so well do I like this way, that I have used it ever since: A slatted platform was built upon the cross-rafters in one of our corn cribs, and upon this the seed corn (only the ears which realized my ideal) were placed about one foot deep, and on both sides and above it stout chicken wire was stretched to keep out mice and rats. Perfect ventilation was thus afforded, and the nearness of the roof kept it dry. Besides, in fair weather, a small door at each gable end of the crib was opened to further keep the corn dry.

In April of 1908, I tested my seed ears for germination by the sand test method, and I have continued this practice ever since. After I had found out just what seed to plant, I was ready. Another field which had been in sod for two years was selected. In fact, we always plant field corn upon sod land. The ground was broadcasted with 12 loads of barnyard manure and plowed to a depth of 10 inches, disked 3 times, furrowed 3 feet by 3 feet, 500 pounds of fertilizer per acre applied to the hills, corn planted 4 grains to a hill, a hand planter being used. The seed germinated nicely and the growing crop started off well. The field was kept clear of weeds, and was cultivated by a two-horse wheel cultivator about every 10 days during the growing season. Care was taken not to go too deep, for corn roots ramify every part of the land and have a tendency to approach the surface. The time of cultivating was not exact, since we went thru the corn after every shower. Twice during the season nitrate of soda was applied at the rate of 100 pounds to the acre. This year (1908) there was a marked increase in yield, but we learned another lesson: Corn planters drop all the kernels in a hill too much in a bunch, hence there were a number of stunted stalks which, if they bore anything, bore but a single nubbin. Our seed corn was selected as in the year before, but we aimed, not at great big ears, but at large, straight ears of a uniform size.

In 1909 we tested seed and planted upon sod, as before, but we tried to get seed kernels scattered in the hill. This year both stalks and ears were heavier. The next year, 1910, the hills were marked off 36 x 32 inches, and what we may have lost in number, we gained in size, weight and bulk. That fall we purchased a manure spreader in order to more evenly distribute the barnyard product over the soil before plowing. In 1911, we dispensed with the use of nitrate of soda, but used instead ground fish scrap, at the rate of 500 pounds to the acre. This was applied by striking off the hills with a one-horse plow and placing a light handful on each side of a hill of corn, then covering with a furrow. The results were just as good as when soda was used, but the scrap not only cost more and the cost of applying was greater.

To sum up the results of our experience would be to tell how we managed our corn crop last year. The seed corn was taken from selected hills, and then thoroly cured. It was carefully tested, and all ears falling below 80 percent in germination were rejected. Because of our five-year system of crops, the same 21 acre field was planted as in 1907. The land was sod and had been spread with manure, then plowed to a depth of over 10 inches (corn roots deep). It was planted in hills 36 x 42 inches, 4 kernels in each hill. The field was cultivated every 10 days, or after a heavy shower. In addition to the barnyard manure, 500 pounds of commercial fertilizer and 200 pounds of nitrate of soda were applied to each acre. A comparison of this year's yield with that of 1907 seems a fair way of finding out just how far we have advanced. In making this comparison, nothing is said as to prices of product, since the fairest tests seems to be by comparing the yield. The following table gives the summary for the two years:

Average Per Acre for a 21-Acre Field

	1907	1912
Bushels No. 1 corn..	49.2	74.1
Bushels hog corn...	11.5	6.7
Bundles stalks	583	609
Manure spread	12 loads	12 loads
Fertilizer used	600 lbs.	500 lbs.
Nitrate of soda used	None	200 lbs.
Distance apart	36x36 in.	36x42 in.
Seed selected	No	Yes
Seed tested	No	Yes

This shows an increase in the five years of about 50 percent in good corn and 4 percent in stalks, and a decrease of 41 percent in hog, or poor quality, corn.

Note.—This is the first-prize article in contest which we announced for this subject some months ago.—Editors.

POTATO BLIGHTS AND SPRAYING

By Prof. H. R. Fulton, North Carolina Experiment Station

Unfortunately much confusion exists about potatoe blights because the term is loosely applied to every unthrifty condition of the tops regardless of cause. Insect injury to the stems, such as that caused by the potato stalk-borer may be responsible; or such trouble may be due to one of the several bacteria or fungi that kills the roots and clog the sap-tubes of the stem. In these cases the yellowing and dying of the leaves are only indirect indications of trouble elsewhere, and no spray application can be expected to remedy or prevent the condition.

Somewhat similar is the condition properly known as tip-burn or leaf-scorch. The leaflets gradually turn brown and become dry and curl from their tips. This may continue until the whole leaflet is involved, but often stops much before this. The cause is lack of sufficient water to properly maintain the leaf tissues. This insufficiency may be due to injuries to roots and stems, such as have been mentioned above, that interfere with conduction of water to the leaves, or to extensive insect attack on the leaves that promotes excessive drying from them, or to lack of sufficient moisture in the soil, or to hot, dry atmospheric conditions closely following periods of rapid growth, even tho there is considerable moisture in the soil. The potato plant requires a very constant water supply thruout its growing period for the best yields. The four things necessary to secure this are (1) early plowing so the soil will absorb all the water possible, (2) the addition of humus to make it retentive, (3) deep preparation of the soil and planting so the root system will not be too near the surface, (4) frequent shallow cultivations continued as late as possible to maintain a dust mulch that will prevent excessive loss of water.

There are two fungous diseases of potato foliage known distinctively as early blight and late blight.

Early blight occurs in varying amounts everywhere potatoes are grown. It attacks full-grown leaves, as a rule, and usually appears on the lower leaves at any time after the plants are about six inches high. Brown circular spots are produced anywhere on the leaves; these increase slowly in size, and usually show rather distinct target-board markings as they become about one-fourth inch across. Weather conditions have little influence on this disease; but because of its preference for well matured leaves it is apt to be most serious under conditions that retard the growth of the plant.

Late blight is far more destructive in its effects, but is limited by climatic and seasonal conditions to particular regions and years. It flourishes at an average daily temperature of about 75 degrees, and when showery weather prevails. New York and the New England States can expect a season favorable for its spread every few years. More occasionally the disease is destructive farther south, and there usually at high elevations. The disease produces a rapid dying of the leaflets, and the entire foliage of a plant is frequently destroyed in a few days. A white downy growth of the fungus develops on the underside of killed leaves, and these give off an offensive odor, especially in wet weather. Spores of the fungus washed into the soil may infect tubers, and these undergo dry or wet rot according to the moisture content of the soil.

Both of these fungous blights can be successfully controlled by spraying. Bordeaux mixture has proved better than the lime sulfur preparations in many comparative tests, and should by all means be used for this purpose. The treatment is productive for each disease, and should be begun before the disease becomes established. This means beginning with 4-4-50 bordeaux mixture when the plants are six to eight inches high to be perfectly sure of heading off the early blight. The plants must be sprayed often enough to keep them protected thruout the growing period, requiring five or six applications at intervals of about two weeks. After the second the strength may be increased to 6-6-50, and whenever bugs appear three pounds of arsenate of lead or one-half pound of paris green should be added to each 50 gallons. The cost is about $1 per acre per application. A good pressure should be maintained to send the material into the tops. In New York for 10 years on an average of almost 200 acres per year, and with the work in the hands of a number of farmers in different localities, the average increase in yield due to spraying was about 36 bushels per acre, and the average net profit per acre due to spraying was about $11. It always pays to spray potatoes properly. The greatest returns will be secured when good soil preparation goes along with good spraying.

GOOD DIRT ROADS

The great move forward in the progress of macadam or brick paved roads is a move in the right direction, but generations yet unborn will see many miles of dirt roads, as it will take years to get around to the paving of all our country roads. Consequently, how important it is that we establish a better system of making good durable dirt roads. Past methods in Pennsylvania will never give us good dirt roads. A sufficient tax is levied, if it was properly applied. It is largely left to each farmer to work out his own road tax, and he proceeds to dig a little where the road needs it worst, and no distance of the road is ever built up as it should be.

I experimented a little on a short stretch of road that was annually subject to quicksand mires every spring, and often became impassable. There was a good fall or grade to carry off water. I started at the lowest point and dug a ditch three feet deep up the center of the road for about 15 rods. I then laid two strings of three-inch tile, side by side, and filled the ditch with cobble stones to within six inches of the top of the road. I then rounded it up well with dirt. This was many years ago, and I am told, altho 35 years have elapsed, that it has remained and is still a good solid piece of road.

There are very few miles of road in Pennsylvania that do not have sufficient fall for good drainage, and with the improved road machine it is a short job to build a mile of excellent underdrained road. With two good teams and a strong plow, strike out a land about eight feet wide down the center of the road, so it will leave dead furrows in center of road. Put four good teams on the road machine and follow dead furrow back and forth, tipping up machine blade each round until you have a ditch three feet deep. Then put a man with pick and shovel to grade up and square out the bottom of the ditch to eight inches wide. Lay in two rows of three-inch tile, fill the ditch with cobble or crushed stone to within six inches of top. When finished, the walls of this ditch should slope back from the bottom to about five or six feet at the top of the stone. Put the dirt back and round up the road with the machine. Four men with four good teams can finish a fourth of a mile every day, ready for the tile. Two men can lay the tile in a day, and with a stone crusher and several farmers working out their tax, furnishing stone, a long stretch of this road can be built in each township every year. This kind of a road, well rounded up, with ditches kept clean and dragged occasionally after rains, will be a good permanent road long after many of our asphalt roads are a thing of the past, and a better road to drive on 10 months in the year. In fact, it never gets deep with mud, and in a few hours after our heaviest rains it will be in fine condition.

If, while the state department is struggling with the main roads the state has taken over to pave, the farmers would adopt this method, and do it thoroly, commencing on the worst sections and applying most of their tax as far as it will go in making a portion of this durable character, it would not be long until our by-roads, which we can not expect to be paved for many years to come, would be the most desirable to drive on most of the year.

I do not wish to reflect on the farmers, as they have borne the heat and burden of road building. It has been up to them to hew their roads thru the forests, and they have done mighty pioneer work. When I hear men who are fortunate enough to be able to ride over the country in automobiles, cursing the farmers because of mud holes in the roads, I can not help but think of the injustice. How little these men know of the toil of the farmers that has been expended to make the roads even as good as they are.

Before state aid was extended, the entire burden of country road making fell upon the farmer. Each township took care of its own roads, sewers and bridges, excepting over large streams. Each township levied a road tax sufficient to keep all roads in good condition, and when you consider the length of road each farmer would have to keep up, especially in sparsely settled townships, you can imagine the great burden. I have paid $50 road tax year after year on a 100-acre farm, half cash and half work; the cash for keeping up of sewers and bridges.

There should be no let-up among the farmers in their efforts, now that the state is coming to their rescue. By united efforts of both forces, honestly applied, the future looks well for a system of roads that will make glad the hearts of those who can afford to travel for pleasure as well as for the burden bearers. The products of the dairy, the fields and the garden all travel over our roads, and so much depends on the condition of those roads that everyone should take an interest, and contribute their aid and influence to improve their condition.—Wm. R. McGill, Crawford Co., Pa.

WEEKLY TOPICS FROM THE FARM.

A Bright Future.—Already the papers are prognosticating bumper crops. Great yields of corn, wheat, oats and hay are announced, and all things pertaining to the farm are described as being in a flourishing condition. Does it not seem a bit premature to herald the bumper corn crop when some of this crop is not planted and that which is, is barely up? Does it not seem that the statisticians are stretching a point when they approximate the yields of wheat when that crop has only started its season's growth? And yet how often is this done! When the season starts early with fine planting weather and everything gives promise of future success, we all, the farmers, statisticians and city men, become optimists and are carried away with the joys of spring and another summer. And yet "there is many a slip betwixt the cup and the lip," and many days of hard, unceasing toil must come before the promised and hoped for bumper crops. The fellow who gets these crops is not the chap who sits back and hopes for them, but he who starts his cultivation early and runs them late.

Potato Spraying.—The sooner we lose the idea that the time to start spraying is when the plants become affected, the sooner will we become better farmers. Spraying, in the case of fungous troubles, is a preventative and not a cure. Generally when the disease has gotten far enough advanced so that it becomes visible on the plant, spraying is of little avail. So start the machine early. We intend to make the first application when the plants are about six inches high and continue every three weeks thruout the season. We have seen the results of many experiments with lime and sulfur described, but so far have failed to find anyone who has made it work as well as bordeaux. Therefore, we stick to the old bordeaux beginning with a 4-4-50 mixture and gradually increasing until it is a 6-6-50 mixture. When the "bugs" appear add two or three pounds of arsenate of lead and there will be no question of results. There is a little trick in mixing the arsenate which, when neglected, spoils the effectiveness of it. Weigh the required amount of paste in a small vessel and add a little water. Mix this thoroly, adding more water, if necessary, until it becomes about as thin as milk.

Live Stock

BREEDING HORSES IN PENNSYLVANIA

By Prof. W. H. Tomhave, State College, Pa.

Pennsylvania is recognized as one of the best horse markets in the United States. The large number of farms in the state demand considerable more horse labor than western states because of smaller farms, many of which are rolling, making the use of power quite out of the question. The more intensive system of farming also has some influence on the amount of horse labor required. The large city markets, of which there are many in the state, are heavy consumers of horses for a trade that can not be replaced by the auto truck. The Pennsylvania farmer has an advantage over the western farmer and horse dealer in that horses raised in the locality are not subject to shippers' fever, and for that reason are more desirable for the local trade if they are otherwise of equal merit.

It has frequently been intimated during the past few years that horses would go down in price as soon as the auto truck came into more general use. Reviewing the horse markets for the past 12 months, we find that the prices on the Chicago market have been higher than ever before, even tho the auto truck has been a strong competitor. For these reasons it seems that there is an opportunity for better horse breeding in the state of Pennsylvania.

It is generally conceded that the horse on the average farm shows as little improvement in the matter of constructive breeding along one line as any kind on the farm. This is probably due to a lack of interest taken by the farmers in horse breeding, and also due to the inability to breed to good draft stallions. The changing from one breed to another has meant a lot of off type horses in many regions.

The old time "company horse" has been a serious drawback to horse breeding in many localities. Horse company promoters have too often unloaded a worthless stallion on a group of farmers at exorbitant prices, ranging from $2,000 to $4,000. Such horse companies could not succeed because the farmers soon became disgusted with such business and dissolved, selling the horse for what he would bring on the open market, a price generally far below the amount paid for him.

Co-operative horse breeding, established on a sound business basis, should be more generally adopted. A group of farmers in a community should get together and decide upon some particular breed that appeals to their needs and arrange to secure a good stallion of such breed. Instead of permitting some promoter or "peddler" to come into the community and sell a worthless horse, a committee should be appointed to visit several reliable breeders and purchase a stallion. In this way they can purchase a stallion for less than half the money required under the old system, and get a much better animal. Where a horse is secured in this way, the breeder selling it will give a fair deal, as such a sale means an outlet for more purebred stallions and mares and is a good means of advertising.

The natural time for colts to be born is in the spring of the year. Like some other classes of live stock, such time seems to fit in well with the farm work, and spring colts, as a general rule, develop much better than those born in the fall. Spring colts have the advantage over fall colts in that they get considerable more exercise, and also have access to late summer and early fall pasture.

Photo by Dr Carl Gay.

A BELGIAN STALLION SHOWING QUALITY AND BREED CHARACTERISTICS.

The selection of the foundation stock is quite as important as in other classes of animals. The mares on most farms are quite capable of producing a good colt if they are bred to a stallion of the proper type. Size in the stallion should not be neglected, but there is a question whether weight should be given first consideration in selecting one for breeding purposes.

The stallions used should be of pure breeding and of good merit. The breed selected is not so important as the getting of a good individual who possesses all the desirable qualities of a draft horse. Any of the draft breeds may be selected and used to good advantage in any community. The mere fact that the stallion is a purebred is not a guarantee of his ability to produce a crop of good colts. There are many purebreds of poor individual merit, and such stallions are frequently less desirable than a good grade, because they possess just as strong a power of transmitting poor qualities as the desirable individuals have of transmitting good points. The use of a high-class stallion in a community means progress in horse breeding, as it creates a greater interest among the farmers, and is also an incentive to giving the colts more care and attention.

In too many instances has the progress in horse breeding been checked by the use of grade and scrub stallions. Frequently where a good purebred has been brought into a community the farmers have not bred their mares to such stallions because of the additional service fees charged over that of a grade or scrub. The result was that the owner of such a stallion could not afford to keep him in the locality, and there was a decline in the type of horses bred. Because of the additional investment in a good stallion, it becomes necessary to charge a higher service fee, ranging from $5 to $10 more than that charged for grades and scrubs. This amount is a good investment, as in most cases a much better colt is the result, and such colts are worth from $50 to $75 more when mature than one from a grade or scrub.

There are many things to take into consideration in selecting the stallion, but the more important are type, individuality, soundness and breeding. A horse of the draft type and of medium weight is best adapted to Pennsylvania conditions. Since the mares on most farms are not very heavy, stallions weighing from 1,700 to 2,000 pounds are best suited to most localities. Blocky, well-muscled and compact form is desirable, as such horse will mate well with most farm mares. The stallion should be a good individual, with the four legs set square under the four corners of the body. The legs should be straight viewed from the front and rear. The action of the horse must be free and easy, with a long and straight stride. Soundness is by far the most important consideration. Bone diseases, such as side bones, spavin and ring bones are the most common and objectionable diseases. The presence of these indicate weaknesses which are usually transmitted and are very objectionable. Diseases of the eyes and throat are also frequently found and should be avoided, as these weaknesses are also transmitted.

The great bulk of the breeding mares on the farms in Pennsylvania are grades and of mixed breeding. Wherever it is possible to secure a stallion of the breed of which the blood of the mare at hand predominates, she should be bred to such a stallion. In case this is not possible, the mare should be bred to a stallion of some other draft breed that comes nearest to her type. It is often a good plan to breed the mare to a stallion that is exceptionally good in the particular point in which the mare is weak. Such a combination generally results in a better offspring than where both sire and dam possess the same defect. Objections of this nature are bound to be intensified in the offspring.

PARALYSIS IN PIGS

Weakness of the hind quarters is a condition frequently seen in growing pigs. It is a form of paralysis and the exact cause can not be stated for all cases. One of the most plausible explanations of paralysis in young pigs is improper feeding. A deficiency of mineral matter, especially lime salts in the diet, is believed to be responsible for the majority of cases. The shortage of lime salts results in the improper development of the bones of the growing pig, and "rickets" follow.

On the other hand, the diet may be all right, well balanced and wholesome, and yet the pigs may not be able to assimilate their feed and get the proper nourishment from it. In this case, the fault lies with the digestive organs. Pigs raised in damp quarters may develop weakness of the hind parts, often said to be of a rheumatic nature. In this case the remedy is self apparent.

So it is evident that paralysis, rickets, malnutrition and rheumatism are similar conditions as far as symptoms are concerned. The same general line of treatment is indicated in all these conditions. Good, wholesome feed, a well-balanced ration, plenty of fresh air and sunshine, with dry, clean, roomy, well-drained and ventilated pens, are the first requisites.

Then see that the pigs have access to a supply of mineral matter in the form of charcoal, bone meal, crushed limestone, wood ashes and salt. For medical treatment, tonics are indicated, nux vomica being generally accepted as the best. The bowels should be kept moving freely by laxatives, as constipation is generally present. If treatment is started early, recovery may be expected; but quite often these conditions are allowed to progress too long before receiving proper attention, and then treatment is usually of no avail.—H. Preston Hoskins, Minn. University.

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Large Berkshire Swine, Registered High grade. Prices reasonable. Write HOME FARM, Center Valley, Pa.

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Hampshire HOGS and Indian Runner Ducks. Pigs $8 each booked for May delivery. Also some fine gilts. Eggs 75c per 15, fawn color. Write W. F. Kessler, Rt 3, Buchanan, Va.

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Large Yorkshire Hogs, Fall pigs, either sex. Gilts bred or open. Service boars. R. J. Figley, East Rochester, Ohio.

A [illegible] YORKSHIRES [illegible] type. [illegible] unrelated. Special sale [illegible] ten dollars. John [illegible] Rochester, N. Y.

Cheshires The hog you need. [illegible] few but fine this year. Want one? Fred W. Card, [illegible] Pa.

MISCELLANEOUS

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Men and Boys [illegible]

Lime-Sulphur vs. Bordeaux.

By J. A. COHILL, Manager of Tonoloway Orchard Co., Md

Many fruit growers were pleased when lime and sulfur became known as a fungicide for summer spraying some few years ago, and there is no doubt that it has done wonders in checking and, in some cases, controlling fungus diseases. However, it has not yet proven that it can take the place of bordeaux mixture as a summer spray. I have been using lime and sulfur and shall probably continue using it, but hereafter only as a preventative for the various fungus diseases.

When you really have a fungous disease, my experience has been that the surest and quickest way in most cases to exterminate it is by using bordeaux mixture. Most fruit growers will agree on that fact, but they believe that the reason lime and sulfur became so popular was because it did not burn the fruit and foliage, it is much easier to make, and is cheaper. The latter two reasons are wholly true, but have you found the former so?

I have 25,000 trees under my management, all apples and nearly all bearing. The varieties are Yellow Transparent, Duchess, Wealthy, Grimes, Jonathan, Rome Beauty, Ben Davis, York Imperial and Winesap. In 1910 I sprayed with 1½ gallons of concentrated commercial lime and sulfur, including 2 lbs. of arsenate of lead when the blossoms began falling, followed by a second spraying 10 days or two weeks later with the same strength. The results were very satisfactory on most of the varieties, with the exception of Ben Davis and Winesap, where the burning was noticeable on the shoots the latter part of May. The tender wood was somewhat scorched and a small percentage of fruit was graded as number two's at picking time.

I did all the mixing myself, and I contributed the burning to two causes: Either the material was too strong (one and one-half gallons of lime and sulfur) or the varieties were particularly susceptible to spray injury. I found the following year that the latter case was correct.

Just a word about mixing the material for summer spraying yourself, or putting it in the care of your most competent man. Nothing is more important, for your profits of the year depend on the quality of your crop, and it is most important that you put particular stress on this feature, since laboring men get careless and look upon it as seemingly unimportant.

In 1911 I cut the lime and sulfur amount down to 1¼ gallons on the Winesap and Ben Davis blocks and used every means possible to be careful, but the burning was even more serious on these two blocks than the year before.

The latter part of the summer of 1911 a slight attack of bitter rot and scab developed on the fruit, which was proof to me that lime and sulfur was not thoroly doing what I had desired. That summer I took several short trips, one thru Berkley County, West Virginia, and the noted fruit section about Winchester, Va. In many cases they had a tale to tell about blight and, in several cases, serious burning of foliage and fruit due to spraying with lime and sulfur.

I consulted Professor Scott, who was then with the Department of Agriculture, about by bitter rot, and he advised me to begin in July with bordeaux mixture and give about three applications. That fall, after picking the crop, I went thru the orchard, picked all mummied fruit from the trees, as well as picking every apple from the ground. The ground apples were sorted and the ones fit for cider were disposed of in that way, and the rest were buried.

In 1912 I began with bordeaux as soon as the blossoms began falling, and sprayed four times during the summer with it, and what were my results? I cleaned up the slight cases of scab and bitter rot, had no bad effects of burning, and over the whole orchard in general the crop was nearer perfection than I had ever had it.

CONTROL OF CLUB ROOT OF CABBAGE AND OTHER CRUCIFEROUS PLANTS

THE PROPER WAY TO BUNCH ASPARAGUS.

The writer has observed the club root of cabbage in seceral sections of the state this year and takes this opportunity to make a statement regarding the control of the disease.

Club root disease is caused by an organism known as a slime mold, which enters the roots of plants from the soil and by its growth within the cells produces an irritation that results in an excessive growth of tissue. This growth is manifested in the enlarged and distorted roots that give the disease its name. The affected plants have a yellow color and are inclined to wilt during the day, but they revive at night. The spores of the slime mold are produced within the cells of the root, and these are released in the soil when the root decays. It has been demonstrated that the organism is able to live for six years in the soil even tho no cruciferous crop is grown; and it may live for an indefinite period when a cruciferous crop appears oftener than once in six years.

It has been found that an alkaline condition of the soil is unfavorable for the development of this organism, and that on well-limed soil the disease does not occur. Therefore, liming is generally recommended where the disease is troublesome. One and a half to two tons of good stone lime per acre are necessary, and should be applied 18 months before planting the soil to cabbages, altho some control is noticeable where plantings have been made six months after liming. Air-slaked lime or ground limestone may be used, but the fungicidal action is slower. An English investigator has obtained good results from the application of 1,500 pounds of unslaked lime per acre in the autumn and 500 pounds of sulfur per acre in the spring.

The plants for setting should be grown on well-limed beds, or on soil known to be free from this organism. One should hesitate to set apparently healthy plants from beds containing some diseased ones, for at the time of setting it is impossible to tell whether or not such plants are diseased. There is a probability that they are affected, altho they may not show it. Where this organism is present in the soil it is well to practice a rotation of three or four years in addition to treating the soil.

As the spores of this organism are able to pass uninjured thru the digestive tract of an animal, they are frequently introduced into uninfested soil thru manure. Manure from unknown sources or from animals fed on affected plants should not be applied to cabbage fields. It is advisable to apply manure as a top dressing to the meadows preceding the cabbage crop, rather than to the soil the year the cabbages are grown.

When one considers that the spores of this organism are too minute to be seen with the naked eye, and that they are produced by the millions in diseased roots of cabbage, cauliflower, turnips, and other cruciferous plants, he will understand the necessity of using great precaution to prevent their dissemination. The spores may be carried into infested fields in soil clinging to a cultivator or to the feet of horses and man, in the soil washed from infested fields, in diseased roots, and in infested manure. These means of dissemination should be avoided, in addition to making the application of lime, if one is to obtain freedom from this disease.—M. F. Barrus, in Cornell Announcer.

ARE WE TIRING OF APPLES?

By W. J. Wright, New York School of Agriculture.

If we are to accept the careful annual estimates of the apple crop as approximately correct, it is apparent that the average yearly production for the past five years is considerably below that of the five-year period beginning with 1895. In fact it is less than half as large. But if we turn to the average wholesale price of apples for the same periods we will find that, while it has been higher for the latter period, it has not increased in the same ratio that the crop has decreased. As a matter of fact, the average wholesale price during the former period was about 65 percent of the present price. Putting it in another way; the average crop for the former period was 125 percent greater than that of the latter, but the price during the latter period has been only about 50 percent greater than that of the former. In the meantime our population has increased by 33 1-3 per cent, and storage has been perfected so that good apples are available over a much longer period than formerly, which should enhance consumption. As a matter of fact, consumption of apples per capita has decreased and decrease alarmingly.

This has probably been due in part to the increased variety of tropical and sub-tropical fruits now to be found in our markets, but to a greater extent it has been due to the increase in price op apples. Fruit is still a luxury, and when the cost of living increases, the luxuries (except tobaccoes and other more or less habit-forming luxuries) are reduced. This is especially true if the luxuries themselves increased in price.

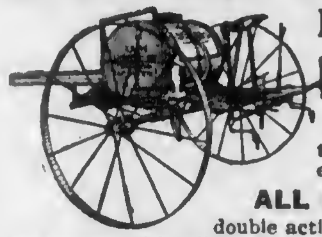
The following letter from a laboring man recently published in the "Fruit Grower" serves to illustrate this point. More than that, it shows a further fact that he is losing his "taste" for apples. "For 15 years or more I was a regular apple buyer. During that time I worked for wages, and generally bought a peck of apples, costing about 30 cents, once or twice a week, for I loved to eat apples. Later, however, apples went up to 60 and 65 cents a peck and I did not buy so regularly, and finally stopped because they stayed so high for years. Last fall apples fell off in price, but this did not seem to induce me to buy, for I had become so accustomed to doing without that I did not seem to care for them like I formerly did." The same is true of countless others.

This may help to explain the unsatisfactory price of the past year. A few years ago we were disposing of crops of apples comparable in size with the crop of 1912, with fairly satisfactory results to a smaller consuming public and when wages were lower and money had a higher purchasing power than now.

It may take years to bring the public back to the apple-eating habit, but it is none too soon to begin, if we are to profitably dispose of the increased apple crops due in the next few years.

Conference on Horticulture for Women.—A general conference on horticulture for women was held at the Pennsylvania School of Horticulture for Women, at Ambler, Pa., May 17, 1913, with sessions at 11 A. M. and 2 P. M. A program made up of addresses by well-known speakers was arranged. A proposal to form a National Horticultural Association of Women was considered and acted upon.

O. K. Champion Sprayer



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FOR SALE Cow Peas, $2.25 per bushel. Crimson Clover Seed, $1.25 per bushel. Wilson's Soy Beans, $2.75 per bushel. JOSEPH E. HOLLAND, Milford, Delaware.

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Horticultural Queries.

This department is conducted by Prof. H. A. Surface, State Economic Zoologist. Questions answered and timely and practical problems in treatment and control of farm and orchard pests discussed. Our readers are given the benefits of the advice of one of the foremost authorities in the country in this department. Address all queries to Pennsylvania Farmer, Philadelphia, Pa.

To Get Rid of Grasshoppers

Will you favor me by sending directions for ridding a small city yard of grasshoppers? They have been in such numbers (for the last two years) as to destroy all blooms on plants.—A. E. H., Philadelphia, Pa.

I can say this is not a difficult matter to get rid of grasshoppers. You can make a poison bran mash by mixing one part of paris green in forty parts of bran and moisten it with molasses and water, and put it where they can eat it, and they will be destroyed. Or you can add one ounce of arsenate of lead and a half pint of molasses to a gallon of water and spray the grass, bushes or shrubs with this and the grasshoppers will be killed. Of course, if you use the poison bran mash, you should not let poultry have an opportunity to eat it. Also if you spray with the sweetened arsenate of lead solution you should not let live stock eat the sprayed grass or vegetation until after it has been washed by a good rain. However, under your conditions, I understand that suggestions as to these precautions are unnecessary. There is no need to worry about killing birds by their eating the poisoned grasshoppers, as birds do not eat insects that they may find dead. Nature provides for taking care of her own in a better way than this.

Beware of Dwarf Trees

I would like to ask your advice about putting in some dwarf apple and peach trees under the following conditions: In my orchard, set out last spring, I have apple trees 40 feet apart, with peach trees between in the rows one way, leaving the clear space of 40 feet the other way. I have one section, about 1,000 feet long, set out to raspberries, and I contemplate putting in a Skinner irrigation system on this section, and one or two more for strawberries. I thought of setting in dwarf apple and pear trees in the raspberries, putting them 10 feet apart. This would take three rows between the fruit rows and to fill in the two fruit rows would take 400 dwarf trees. I want to crowd on all that is practical on the irrigated section to get all the benefit possible from it. The raspberries are about half each of red and black. The dwarf trees could set in the berry rows and not require much extra cultivation.

Do you think the dwarf trees are profitable, or that under these conditions it would be advisable to put them in?

I am not well posted on dwarf trees and will appreciate your advice. If you think is advisable, what varieties of apples and pears would you advise putting in?—F. G. R., Monroeton, Pa.

It will not pay you to plant dwarf apple trees. It may possibly do to plant dwarf Duchess pear, but this is the only variety of fruit of any kind that I would plant as a dwarf. I have had experience with dwarf trees, and am satisfied that they are not profitable in comparison with regular standard trees. There are not so many advantages as disadvantages in dwarf trees. By the practical grower they should be regarded as little else than toys. Where one wishes to crowd them into a lawn where his special desire is to avoid tall or large trees, or to plant them together as a hedge, this can be done to good advantage. I find dwarf pear trees planted half way between standard pear trees as fillers to be all right and profitable.

Beware of This Man

Some few weeks ago I bought some peach trees from an agent that claimed to be a state man and was paid by the state. I got 100 trees from him, and paid $25 for them. He only had four kinds that he said was good for this section, and the rest was $6 per hundred. I don't own any land to plant them on, or own any farm. I signed the order, but wish now I had not. Can the company collect payment if I refuse to take them from the station? Any information will be thankfully received.—J. A. E., Munson Station, Pa.

There is no state man or state representative who is selling any material of any kind. The state has nothing to sell, and the men employed under me have been given very definite directions that they shall not use their time for canvassing for anything or selling anything whatever while they are on duty. Unfortunately, we did not have enough funds to keep them employed during the winter months, and some of them were then engaged for part or all of their time in other business, and they may have sold something, but at that time they were not in the state's employ, altho I can not learn of any man who was in our employ part of the time using the other portion of it for selling trees.

I am sure that the person to whom you refer is Mr. J. C. Shaffer, of Mill Hall, near Lock Haven, Clinton County, who has traveled over the northern and central counties of Pennsylvania, leaving a bad trail behind him. He has represented himself as having been connected with this office, and has said that there are only four kinds of peach trees fit to grow, and has sold these at 25 cents each. Your description of the actions of the agent tallies with his tricks. He tried his methods in Columbia County, and was there caught by the farmers and promised to behave himself. He tried to sell fruit trees said to be budded on oak roots to be borer-proof, in Tioga County, and I helped the grange to defeat his purposes there. The orders that he had taken were cancelled, and he could not force payment. Whenever any man comes around with anything to sell, representing himself to come from any department of the state government, you may know that he is fraudulent and a rascal. The state sells nothing of any kind. This has been published again and again, and I can not see why people do not understand it. Such a man should be arrested for getting money under false pretense and held until the proper state authorities can come and appear against him.

As you confess that you do not own land, and do not wish to plant them, it would look as tho you had done a wrong thing in giving your order. I can not understand why people will order goods of any kind of irresponsible traveling agents, and then complain afterward that they are swindled. Such a thing is to be expected under such circumstances. You paid from two to three times what your trees were worth, and that much more than first-class trees from the best nursery in this state would have cost you. Now, if you have sufficient evidence that the man made a misrepresentation, and that he was thus getting money under false pretense, you can have him arrested, or you can at once cancel the order, if you can learn his name and address, and write to him by registered mail. If you can prove that they were sold under fraudulent representation, you can refuse to take them from the station, but it is better not to wait until they are shipped. You should have learned the name of the man when he first came around, and should have written to me sooner, asking about him. It would not have taken three days to have obtained the information then that might save you much trouble now.

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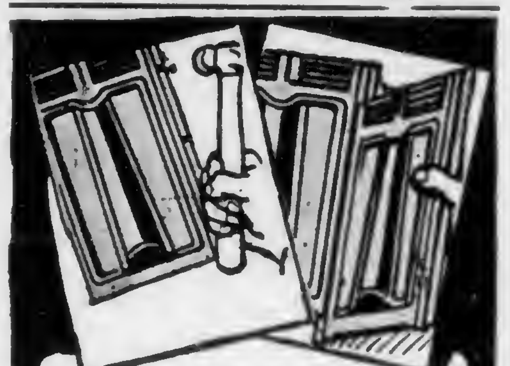

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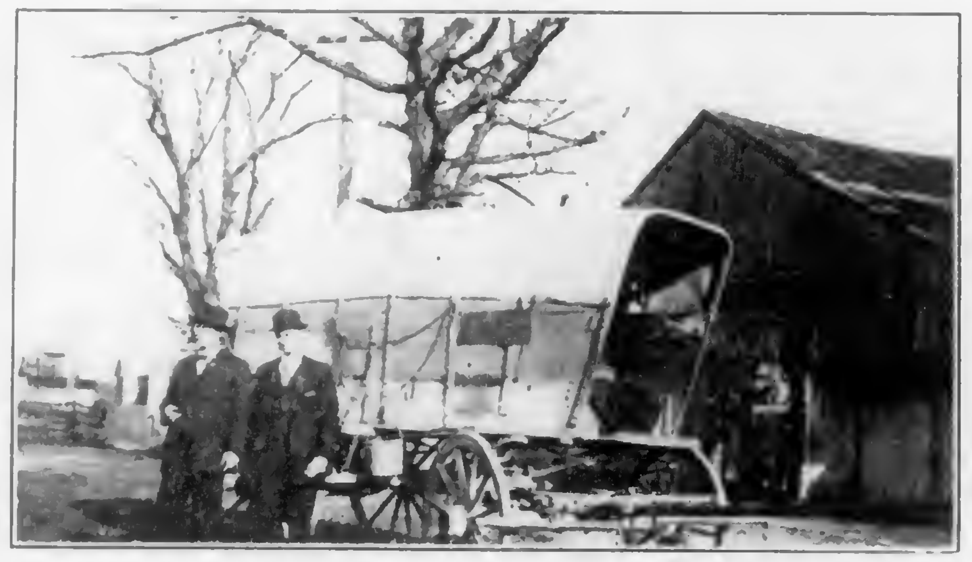
Business Side of the Milk Pail--No. 2.

By Dr. G. M. TWITCHELL, Androscoggin Co., Me.

The Cow Side

Speaking from a business man's standpoint, there are other important factors centering in milk making in addition to those enumerated in our first article. A good milk maker must be a man, or a woman, with a vision. There can be little hope for success here or elsewhere unless the picture is in the brain. No man can force milk from a cow, it must come by invitation. Only a big conception of the functions of motherhood will insure a big dairyman. The trouble is that there are too many on the lower levels, and this keeps the cow down. The measure of the man determines the measure of the herd. Capacity for production is an elastic proposition.

There must be form; there must be harmony of parts, heredity, capacity to receive a big amount of food, liberal and individually made rations; but over and above all these there must also be that subtle something we call environment, which prompts the animal to do her best along the line of her natural instincts. More failures come from neglect to establish this mental harmony than from other causes.



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The County Has no Railroads and Hucksters do a Thriving Business, but Add an Expensive Link in the Chain of Marketing.

Somewhere in that marvelous piece of mechanism, beyond the touch of man, there is a vital connection between mental and physical parts. It runs thru all life, and highest service is possible only where greatest harmony prevails. The man who, as he sits down by the side of a cow, finds her restless, uneasy, rattling her chain or stanchion, had better let the hired man have the job. When he finds a cow that, as he milks her licks his arm, there is certainty that he will get the last ounce. We all know that the presence of a stranger at milking time checks the flow of milk, but we have not yet found the connecting link between the mental and physical which vibrates so promptly to our profit or loss. Over and over must it be emphasized that it is the last quart of milk which pays the biggest profit, and no man knows whether or not he is getting every ounce possible. The advice to sing as one milks is wise, provided there is music in the voice. On the ranches, in case of a stampede, the men sing as they ride along side the frenzied herd until they grow quiet. There is logic in the claim once made by John Gould, the veteran dairyman, that "Every dairyman should sing as he milks, but that care is necessary not to sing 'Old Hundred' to a Hallelujah cow."

Looking for the business side of the milk pail, whatever can possibly increase output becomes necessary. Too much reliance has, in the past, been placed on feed, as tho it, and it alone, would do the work. Important as this is, men are learning today that there are other factors not to be overlooked. We have learned that there is no fixed ration for a herd, or a cow; that to be a successful dairyman each individual must be studied daily and fresh combinations made to suit individual fancies; that physical and mental conditions are constantly changing, and to insure heaviest production one must read intuitively the cravings of individual animals. All this but adds emphasis to the claim that to be successful in milk production one must have a vision, clear and distinct, of conditions not yet realized, of animals not yet bred.

The question of ultimate product must ever remain an unsolved problem, for there is no limit save the limit of the man. Our herds are burdened with non-paying cows because some men cling to fancy for purity of blood, of any strain, others seek first of all for color, others are caught by the glamor of some large performance by a single individual, and without pausing to investigate whether she is an accident or representative of fixed principles in breeding, cling to some descendant as of supreme worth until finally death or failure closes the operations. Certain breeds represent dairy type in most pronounced form and dairy functions in most liberal endowment, but it does not follow that because a cow belongs to either breed, or has been bred in the purple even, she must be a profit earner. The problem of individuality needs to be more critically studied.

No man can afford to purchase a male, with which to head his herd, without a personal inspection of the animal and his ancestors on both sides. A bull is one-half the herd, and may be more, and the only reason for seeking a pure bred is that improvement may follow. No grade bull should be allowed in any herd. A state law should prohibit the use and keeping of grade males. In the best of breeding there has been too little attention to continuity in order that desired characteristics might be fixed and prepotency insured. Becaus of this, we find a startling percent of failures in reproduction. We have long since passed out of the realm of natural production, and for centuries have been evolving an abnormal animal. It is a law of Nature to rebel against any disturbance, and while animals have responded wonderfully to the invitation of skilled breeders, seeking improvement, that principle of reversion holds tenaciously and manifests itself at once when the directing energies of the breeder is content to rest on what others have accomplished. Men must have a vision in order to hold the level already reached; surely to carry the work of breeding and development to higher levels. Fancy bears an important relation to enthusiasm; therefore the dairy breed to be selected by the dairyman must be in harmony with his desires and purposes. There is no room today for the dual purpose animal in profitable milk production. The man who wants steers had better cling to the steer breeds. Milk in profit-bearing quantity, and beef such as the market craves, do not grow on the same hoof.

Eight thousand pounds of milk yearly is today coming to be considered the minimum for the cow supplying the milk cart. Such cows can not be picked up in the sales stables or centers. The only way to get and maintain a herd, every one of which is a profit-maker, is by breeding, and here more attention must be paid to the male. Dairy type in most pronounced form is demanded back of the shoulders, while in front there must be evidence of intensified masculinity. As we seek a rise in volume of production, especially of fat content, there is an increased tendency to femininity in the face of the male, and this can hardly be the stamp of reproductive power.

Fortunately for the farmer, engrossed with many duties, the breeding of superior animals has a wonderful fascination for wealthy gentlemen, and everywhere we find large breeding establishments where, under most advanced and rigid rules, by most carefully trained men, the work of breeding is carried on. Such men are great public benefactors. Without them our dairy interests would signally fail. They open the way by which individual milk men, or neighborhoods, may obtain the choicest blood, in the best type of animal, backed by evidence of power to do, at reasonable prices. Rightly selected and properly cared for, such bulls will steadily lift possible production—provided, and here is a big pause—provided the buyers and future calf growers have an appreciation of what these bulls represent in their breeding and the environment under which they have lived. To neglect this is to insure practical failure. To think of a bull as simply the possible sire of a calf and therefore to be neglected and kept on roughage is to dwarf all reproductive powers above the merely physical. All this is written to support the claim for a clear vision. The man who sees before him a neat, roomy, well-lighted tie-up, clean in every part, with every animal sleek, well groomed and comfortable, will be far more likely to own a productive and profitable herd, satisfy the righteous demands for a clean, pure product, and find lasting enthusiasm in his work, than he who is slack in his methods, slovenly in practices, neglectful of those fundamental essentials necessary for the proper maintenance of a herd.

It is right and necessary that we discuss the business side of these problems from a purely commercial standpoint, but it is entirely wrong if we stop there. What a man does has a reflex influence on his life. The man content with dirty tie-ups and cows, neglectful of the simple laws of sanitation, is pretty sure to be a sloven in everything, simply because there's no incentive for improvement. The man with a vision may never see its realization in life, but striving for it will inevitably lift to higher levels where will flow rich and increasing compensations. Difficult as are the problems facing the milk maker, they can every one be solved right, if one will but think as he works. If we but realized that a limitless field stretches before us, no matter where we toil in Nature's laboratory, and that honest striving will certainly lead to results which will fill the hours with satisfaction and the days with comfort, then would life become one glad sweet song.

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Find the business side of the milk pail by knowing the cost of production per quart of milk; by eliminating the non-profitable cow, studying the problem of rations with sole reference to individual requirements; by seeking always that conformity to good sanitation which will insure a clean, normal product; by relying upon best producing cows and a bull noted for his blood lines and individual worth; by growing the heifers with sole reference to the work they are to do, and finally building clear and distinct that vision of the herd, yet to be, ideal in every part, increasing yearly in productiveness and ever supplying the incentive which alone can grow a Man.

INTERESTING FARM BUTTER MAKING CONTEST

The April farm butter making contest conducted by the Dairy Husbandry Department of the Pennsylvania State College has been completed with a total of 63 samples submitted. That such an educational contest is favorable to the buttermakers on the farms over the state is clearly shown by the many samples submitted and the many inquiries received with regard to the contest.

Mr. C. W. Fryhofer, Federal Butter Inspector of Washington, D. C., judged the butter. The samples averaged very good; the highest score being 92½ points, the lowest score 85. There were 17 samples that scored 89 points and over. This was a good showing for the first contest, because early in the spring, when feed is rather poor and conditions on the farms in general are not the best, it is hard to get uniform butter production.

Over-ripe and old cream flavors were found in many samples. These flavors are most always caused by holding the cream at too high a temperature before churning, or to holding the cream too long before churning. Most cream is held too long on the farms and often develops a stale or tainted taste. Much improvement in the flavor of farm butter could be made by giving the cream a little more careful attention while it is ripening, and churning more often. A weedy flavor is quite common at this time of the year, due in most cases to cows being turned on scanty pastures and being forced to eat everything green. This will be largely overcome with good pastures.

The body of many samples of butter seemed to be somewhat greasy. A greasy and soft body in many cases indicates churning at too high a temperature. Soft butter with a very little working loses its fine qualities and becomes greasy. In the spring and summer, when pastures are new and cows are fresh, the butter fat is naturally softer than in the winter and consequently a lower churning temperature should be used than has been used in the winter.

There is a great variation in the salt content of farm butter. A more uniform salt content would help the sale and demand for farm butter very much. Samples submitted in the contest ranged from almost nothing in percent of salt to 9 percent. There should not be such a wide variation. Butter that contains only 11 percent moisture, as was the average for this contest, should not have much more than 2.5 percent salt. If more than this was used it most always remained gritty and undissolved in the butter. Much poor salt is used. Only a fine, smooth salt should be used for butter.

The following did not object to having their scores published and received 89 or above:

Name.	Address.	Score.
Arbogast Farms	Easton	90
Baker, J. Thomas	West Grove	90
Barnhart, Mrs. Geo. S.	Greensburg	90.5
Barrowcliff, W. L.	Laceyville	91
Beck, Jno. A. & Son	White Deer	90
Brenner, H. W. & Son	Jamestown	91
Bridges, Frank D.	Burgettstown	92
Clemasn, W. A.	Meadville	92
Deep Spring Creamery	Wallpack Center, N. J.	92
Dinsmore, J. A.	Washington	92
Dublin Dairy Association	Doylestown	92
Farabaugh, Miss Mary	Ebensburg	90.5
Gipe, Mrs. H. E.	Washington	91
Graybill, A. S.	Bird-in-Hand	91
Greene, Mrs. Wm. A.	Brookville	90
Hall, H. B.	New Enterprise	91
Hauber, G C.	North Bingham	91
Jones, Horatio P.	Danville	89
Kapp, Mrs. Emma C.	New Kingstown	89
Kauffman, Mrs. Frank	Sellersville	91
Keller, W. T.	Meadville	90
Kennedy, C E.	Canton	90
Kirchner, R. B.	Latrobe	92
Lee, S. E.	Bedford	92
Leonard, Austin & Son	Troy	92.5
Lindley, H. A.	Washington	90
Morrow, Mrs. D. A.	Tyrone, Pa.	91
Mueller, R. S.	Conshohocken	91
Newton, Mrs. E. H.	LaFayette	90
Park, Robt. L. & Son	Canonsburg	91
Read, Mrs. Amos C.	Clearfield	89
Reeves, Wm. L.	West Chester	90
Ritchie, Mrs. C. S.	Washington	91
Smith, Albert	Doylestown	92
Smith, Joseph C.	Millerton	90
Smith, Thomas	Gardenville	91
Stoughton, O. W. & Sons	Butler	90
Straub, Herman	Murdockville	89
Taylor, M. A.	Grover	91
Van Dusen, B M.	Doylestown	89
Walkinshaw, Miss Mary E.	Millwood	90
Yoder, Maurice E.	Mattawana	92
Young, T. J.	Westover	90
Ziegler, J. Horace	Telford	91

—Ernest L. Anthony, Asst. in Dairy Husbandry.

Guernsey Sales.—A comparison of the number of sales recorded of Guernsey cattle for the last 20 years shows a very interesting condition of growth in popularity of this breed. During the fiscal year ending April 30, 1913, the number of transfers was 8,142. This is a comparative gain of 164 percent over those of five years ago; 390 percent over those of 10 years ago, and 849 percent over those of 20 years ago.

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193 Galloway Station, Waterloo, Ia. 463

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Poultry

EXPERIMENTS IN POULTRY FATTENING

That it does pay to feed fattening poultry for periods longer than two weeks has been demonstrated by experiments at the Pennsylvania State College, and which are made public by M. C. Kilpatrick, of the poultry department, in his lectures before farmers' institutes and poultry associations. The tables which he gives by means of charts show not only that it does pay to feed fattening general purpose birds longer than two weeks, but that there is great profit in the business when it is done intelligently.

Fattening Cockerels of General Purpose Breeds

60 cockerels, 15 weeks old—Initial weight, 131.5 pounds—Cost, 18½c—Value, $24.33—Selling price, 18c pound.

	1st Week	2d Week	Total 1st & 2d Wks.	3d Week	Total
Total gain	45.7	30.4	76.1	12.8	88.9
Food consumed	119.9	108.97	228.87	104.4	333.27
Food, per lb. gain	2.62	3.25	3.00	8.15	3.75
Value of food	$2.03	$1.84	$3.87	$1.77	$5.64
Cost, per lb. gain	.044	.06	.05	.138	.063
Value gain above feed cost	$5.51	$3.63	$9.17	.53	$9.70

Sixty general purpose cockerels, 15 weeks old, were used in the experiment. To start with they weighed 131.5 pounds and represented a market value of $24.33, at the quotations of 18½c a pound. The object of the test was to find out what it cost to produce a pound gain in live weight, over and above the cost for feed, and how much feed it required to produce one pound gain in live weight.

The birds made the greatest gain during the first two weeks, in this time increasing in weight by 76.1 pounds, at a cost for feed of $3.87. The value of the gain over and above the cost for feed was $9.17 during the first two weeks, making the gain in live weight cost 5c a pound. It took three pounds of feed to produce one pound of gain in the poultry, a total of 228.87 pounds being fed, which effected a gain of 76.1 pounds in the cockerels at the end of two weeks.

The same birds were fed for the third week, but profitable gains could not be made. Instead of three pounds of grain for a pound gain in live weight, it required 8.15 pounds, and the cost of each pound of gain was 13 8/10c instead of 5c which was accomplished the first two weeks. The value of the gain above the feed cost during the third week was only $0.53, while during the first two weeks it was $9.17. Altho practically the same amount of feed was consumed only 12 pounds in weight were gained the third week, in contrast to 38 pounds each week for the first two weeks.

In discussing the matter, Mr. Kilpatrick said the gains were no more than could be accomplished by any farmer or poultry breeder under average conditions and with general purpose birds. He was highly enthusiastic over the possibilities of feeding birds for fattening purposes, and said that with a small investment of not more than $3,000 he believed a comfortable living could be made in buying fowls at market prices, feeding them for two weeks, and then reselling them at the same prices for which they had been bought.

The fattening feed used at the State College consisted of 60 pounds of corn meal and 40 pounds of bran. When skim-milk was available, 1½ pounds of this was mixed with every pound of the grain ration. Five percent of beef scrap was used as a substitute when there was no skim-milk. The mixture was made soft by the addition of water until it would run in the feeding trough. Sour milk was recommended in preference to sweet as the fowls like it better and would eat more of the ration.

Feeding was done only twice daily, and the birds given all they would clean up in 15 minutes. They were confined in crates, five or six birds being kept in each crate. As the ration was made liquid by the addition of water or skim-milk, no water was provided; neither was there any grit or green feed. Yellow corn meal was recommended in preference to white, as it gave a finer colored flesh. The fattening mixture of meal, bran, beef scrap and skim-milk cost an average of about $1.69 per hundred pounds on the open market.

Instances were pointed out by Mr. Kilpatrick where many persons made a profitable business of going to the country and buying up birds from the farmers and often grain to feed them on from the same farm, then of keeping them for two weeks and reselling them after they had been increased in weight from the fattening feed. He thought it would be better for the farmers to do the fattening process themselves and pocket the profits.

Following is a financial statement showing how a profit of 15c had been made on each bird by feeding for a two weeks' period on the fattening ration:

	1st Week	2d Week	3d Week
Initial cost	$24.33	$24.33	$24.33
Food cost	2.03	3.87	5.64
Total cost fat	26.36	28.20	29.97
Market value	31.90	37.37	39.67
Profit above food cost	5.54	9.17	9.70

Lynford J. Haynes, Erie Co., Pa.

ROUP

Hundreds of times, perhaps, in a year I have been called upon to describe roup to poultry people or name a curious disease in certain flocks that, after all, is merely roup and not what the owners of the flock are inclined to think it is. In this disease, now spreading over the United States, carried, more than likely in poultry shipments, my experience shows me three forms, and a flock may show but one of these, altho the rule is, if given time, for it to show every form, from simple to malignant.

You often hear owners of flocks say: "Ah, I don't mind roup in my flock. Every once in a while some members of the flock get wheezy, short of breath, eyes matter and swell, but all I do is to place a little coal oil in the drinking water, or a little arsenite of antimony there instead of coal oil; or give some quinine and feed them heavily to keep up strength and they soon will be all right."

We have epidemics of cold or influenza that usually stop soon without medicine, mistaken for genuine roup. Roup in its mildest form merely resembles a cold, with this exception, that the germs, even in mild cases, bring on a depression that will soon stop laying. And my experience is that mild attacks of roup seldom go thru a flock in the simple form, but usually the malignancy increases. An influenza germ can kill some in a flock, but it is entirely different from a roup germ, which is so closely akin to a diphtheria germ, and such a persistent germ in lurking a long time in a fowl or about its premises, that its danger can not be estimated.

There are only certain cases where it starts in the common and accepted form, or the highly and quick malignant. Usually first cases seem but cold, and the owner, feeling that severe measures in the matter of a sick fowl are best measures, kills off first cases and thus may never be quite sure that it was roup he cut short.

Had it been roup, next would have come swollen eyes, going blind, cheesy deposits sticking tight to mouth and throat, diphtheritic ulcers, forming on comb and wattles, and this is why it is often called "Sorehead" by some; chicken pox by others, erroneolsly to be doctored and left run at large, together with the further danger of the flock. The longer it remains in the flock the surer the future attacks. In and flock are many that are immunne at first to these germs, especially the older fowls, but let it go on and these succumb at last. When you see a first sniffler, get it out of sight on suspicion; but when you see swollen eyes, cheesy deposits, even tho sores are not appearing on the comb and wattles, and the greenish intestinal discharge and horrible smell, you may know you are dealing with a plain case of roup; the sores and smell and intestinal symptoms are likely to come if you delay.

In this form may appear the extremely malignant form that roup can take. Some fowls may suddenly die without previous symptoms of any kind at hand, unless it might be a slight droopiness and darkening comb. A fowl that dies in this way will suddenly give a violent flutter and fall over dead, the comb turning nearly black. In these cases the extreme malignancy of the roup germs are shown. The membrane growing low in the windpipe has suddenly shut off all air, or the thickening blood has either paralyzed the heart, or, refusing to take blood back from the brain fast enough, apoplexy was the result.

In this form, because the comb is dark and death occurs suddenly, it is nearly sure to be classed by some people as the black head instead of roup. Again, in this malignant form, it will often quite suddenly start, and you will notice that when it comes in this dark combed, quick death form, the young pullets are first attacked, as a rule, because being of the nature of diphtheria, the young are most susceptible to it. If it attacks a flock first in the malignant form, showing no symptoms but a slight droopiness, dark comb and quick death, it will finally, for the older fowls, show up lighter and lingering cases that develop the rattling throat and other symptoms supposed to belong to all cases of roup.

As to cures, there are plenty on the market, but while many help you in your work, not one must be relied upon without your help in getting the sick from the well entirely. To bury any of these dead in a shallow grave where fowls can scratch over them, means keeping attacks of it in most malignant form over at hand. To allow the dead to lie about on the fields to which chickens have access means big loss, not only to the flock yet left but to turkeys, ducks and geese. Why ducks and geese can be around with roup stricken chickens and not contract the disease I do not understand, tho turkeys are highly susceptible to the disease. But this I do know, that if ducks gorge on the carcasses of fowls dead of roup, the ducks die horribly poisoned, bleeding profusely from nostrils and mouth. Kill off first cases, burn and watch closely for first symptoms in other cases and kill these. A well fed, well cared for, healthy flock holds great resistance against its fast spread; a poorly fed, rain soaked, filthy kept and influenza infected flock succumbs to it easily and fast.—I. M. Shepler, Indiana.

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Grange

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EDITOR'S NOTES AND COMMENTS

"Hope springs eternal in the human breast." Every normal, sane person can testify to the verity of these words of Pope. And if our hopes are stronger at one season of the year than another, surely it is at this season. Nature on every hand bears evidence of renewed and undaunted hope. The budding trees, the fragrant blossoms, the verdant fields, the returned birds bursting their throats with songs of gladness, all tend to inspire new hope and ambition in the hearts of those whose environment furnishes these miracles. Let not the abundance of these experiences blunt our sensibilities. Farmers, of all people, should have their aesthetic nature most highly developed. And to a great extent they have. The American farmer rightly resents the word picture in "The Man with the Hoe," by Edwin Markham. He is most blessed whose enthusiasm is tempered with the knowledge that some disappointments await him. That all his labors will not yield a hundred fold; that fruit will not set at every place a blossom is seen. This eternal hope is born of an implanted certainty that the "good time coming" will come—with the aid of our best efforts. The work that we find must be done, in order to realize our hopes, should be considered as an opportunity, not as an interposition of Fate to thwart us.

Picnics, Harvest Homes and local fairs are already being planned for in many places. Some of these events, especially where they have become well established, are attended by immense crowds of people. They offer an opportunity for the accomplishment of much good if properly managed. The general condemnation of fakirs and immoral features has been a healthy sign, and most of these affairs are clean and wholesome. The arrangements for entertainment, speakers, amusements, etc., should be in the hands of a competent committee. The day should not be too full of any one or of all these things. Social mingling, one of the chief uses of a picnic, must be kept in mind. Everybody should see that everybody meets everybody and has a good time. Let speakers who understand the farmers and their problems—those who are really in sympathy with his life and work—be selected to do the speaking. Too often the speakers are men of other professions, who use the time in applying soft soap and chloroform.

NEW YORK COMMISSION MERCHANTS' BILL

New York has enacted the Cole commission merchants' bill, and the law will take effect on August 1. While the bill as finally enacted differs in material respects from the original Roosevelt bill, introduced early in the session by state senator, now assistant secretary of the navy, Roosevelt, it nevertheless marks an epoch in the relations of shipper and commission merchant. At the outset it was violently opposed by all commission men, and they succeeded in getting the committees of both houses before whom the bill came up for a hearing, to modify it in several important particulars, and yet the new law can not fail to be of great advantage to the producer and shipper and to the honest commission merchant as well, in that it will weed out of the business the irresponsible commission dealers. The legislative committee of the state grange made a strong fight for the bill and was constantly on guard over it until nearly all opposition to it was withdrawn or rendered of no avail.

Among the important provisions of the law are the following:

1. Every commission merchant shall, upon the receipt of farm produce, make a record thereof, specifying the name and address of the consignor, the date of receipt, the kind and quality of such produce, the amount of goods sold and the selling price thereof and the items of expense connected with the sale, which record shall be mailed, together with payment for the consignment, to the consignor within 48 hours, unless otherwise agreed.

2. Every commission merchant must give a fidelity bond in the sum of $3,000, a part of which can be collected by the producer for money not honestly accounted for to him in payment for produce shipped.

3. The Commissioner of Agriculture is empowered to investigate, on the complaint of an interested person or on his own motion, the record of any person or firm making application for license, or any transaction involving the sale of farm produce on a commission basis, or the failure to make true returns and settlements or the making of false statements as to condition, kind or quality of goods received or while in storage, and the making of false statements as to market conditions. Commission merchants who are given the right of certiorari are also granted 17 days following the filing of a complaint in which to adjust difficulties before the Commissioner of Agriculture assumes charge of the matter. If a commission merchant is found to have violated any of the provisions of the law, with intent to deceive, he shall be guilty of a misdemeanor.

The Commissioner of Agriculture may refuse a license, or may revoke one already granted, where he is satisfied of the existence of the following cases, or any one of them:

1. Where a money judgment has been entered against such commission merchant and upon which execution has been returned unsatisfied.

2. Where false charges have been imposed for handling or services rendered.

3. Where there has been failure to account promptly and properly or to make settlement with intent to defraud.

4. Where there have been false statements as to condition, quality or quantity of goods received or held for sale on commission when the same might be known on reasonable inspection.

5. Where there have been false and misleading statements as to market conditions with intent to deceive.

6. Where there has been a combination to fix prices.

7. Where the commission merchant purchases, directly or indirectly, goods for his own account without prior authority therefor or without notifying the consignor thereof.

The chief benefit, or at least one of the most important benefits, that this law will confer will be to rid the business of the irresponsible commission dealers. And this benefit will accrue to the honest commission man, as well as to the farmer or shipper. The shipping season for farm products such as is handled by commission dealers is so short that a farmer rarely comes to know the true character of the man to whom he makes consignments until the season is well over, and the dishonest dealer can easily go out of business on short notice, or if he continues another year, may change the name of his firm, and do the same nefarious business all over again the next year. There have been many instances of this kind. Under the new law the honorable commission merchant will, when he procures his license, have the seal of the Department of Agriculture that he is responsible, and this will be to him a very important asset in his business. And the farmer will have no hesitancy in shipping his produce to the man or firm who, having been examined as to his financial ability and his honesty of purpose in conducting a commission business, and having the seal of the department, is thereby pronounced "safe and sound." If this works out as we believe it will, other states will surely take counsel from New York and follow its example.—J. W. Darrow.

GOOD MARYLAND SUGGESTIONS

A perusal of the proceedings of the fortieth annual session of the Maryland State Grange shows that it was a meeting of life and interest. Worthy Master Patterson's address is very helpful and contains splendid counsel. Among the new things he recommends for the consideration of the executive committee are:

"The use of school houses as social centers, thus giving an opportunity for the young people to find recreation in places surrounded by good influences, instead of being forced to seek social life in saloons and cheap places of amusement. Let us have a department of recreation as well as of education and health."

"The broadening of the departments of health so as to reach the children of our schools. Many a child needs food for the body as well as for the mind. Let us spend more for prevention and not so much for cure will be required: more money for developing strong men and women, both physically and morally, and then we will need less for hospitals, asylums, poor houses and jails."

"The interests of the farmers, I believe, demand a physical valuation of the property of corporations and the taxing of the same on the same basis as farm property is taxed."

"We should keep in touch with the parcel post situation and be ready to give as much support as we possibly can toward extending the measure so that it will give us a real postal express, and at rates which will be equitable."

"I am satisfied that a scheme of co-operative production and selling could be developed if we could find someone who could give time enough to it at the beginning, and have it start in a small way and then grow gradually and naturally. Most of the schemes attempted require starting at the top with no capital or money to pay for the kind of service demanded."

The reports of the officers of the State Grange are very full of good thoughts and suggestions. One of the special papers, that of Mrs. Albert C. Muhse, on "The Necessity for Education on Rural Sanitation," should be read by every rural resident. It has been printed for distribution in a separate pamphlet.

NEW GRANGES

The number of granges organized and reorganized from January 1, 1913, to March 31, 1913, both inclusive, was as follows:

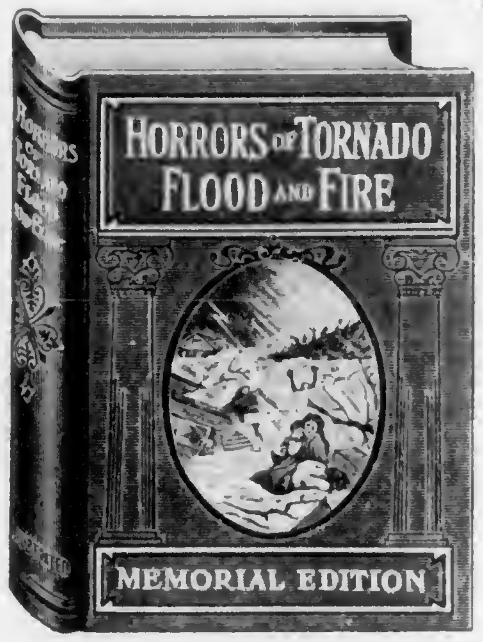
Organized

California	1
Colorado	3
Idaho	2
Illinois	1
Indiana	1
Iowa	1
Kansas	6
Maine	2
Maryland	3
Massachusetts	6
Michigan	8
Minnesota	[illegible]
Missouri	9
Montana	15
Nebraska	10
New York	16
Ohio	24
Pennsylvania	21
Oregon	5
South Dakota	12
Washington	6
Wisconsin	7
Wyoming	2
Total	162

Reorganized

Colorado	1
Kansas	1
Massachusetts	[illegible]
Ohio	1
Pennsylvania	[illegible]
Washington	1
Total	[illegible]

C. M. FREEMAN,
Secretary National Grange.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AGRICULTURE THE KEYSTONE OF NATIONAL PROSPERITY
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Established 1880. Published Every Saturday.
Entered as second-class matter at the postoffice at Philadelphia, Penna.

The Lawrence Publishing Co., Proprietors
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Philadelphia, Pa., May 24, 1913.

CONSERVATION OF ENERGY

The cry of modern business is now conservation. The government is spending large sums of money each year for the conservation of timber, soil fertility, birds, etc.; the business man is working with untiring energy in order that each day there may be something in his business conserved, and the agricultural scientist is working towards the goal of the conservation of soil nitrates. But the farmer, as yet, has not begun to bring his serious attention to this all important factor in farm economics. It is just starting, and the wide awake farmers are beginning to see the new order of things and adapt their methods to new principles. It will be a long time, however, before every farmer conserves his resources. What has the farmer to conserve? Certainly it is important for him to conserve his soil moisture, his soil fertility and his bank account; but back of all these comes energy, and there is not one farmer in ten who conserves energy to a great extent. The city business man has found it imperative, and the farmer, who runs just as great and complicated an organization, must also find it so if he is to meet the increasing competition of the future. Conservation of energy does not mean the saving of labor by resting, as many men seem to think, but the management of a day's work so that the maximum amount of work may be accomplished with the minimum amount of time and energy. We know of a farmer who leaves his work in the fields and comes up to the barn when he wants a drink. He hires four men, and they all take the same little vacation, once in the forenoon, and once in the afternoon. It requires about five minutes each for these men to reach the barn. They spend another five minutes at the barn, and again another in returning to work. One hour is lost each day, or six hours a week, or one day a month, or six days a growing season. These little energy wastes soon run into days and weeks, and are a source of waste entirely inconsistent with good business management. Do not take two steps when one will do as well, and conserve the energy of your men and teams as well as your own. This means careful management of the day's work before the day arrives rather than at the time the men and teams are ready to go to work. The most profitable time in the day is in the evening, when the chance comes to map out the following day's work so that each man and each horse can do his work without lost time or energy. When such conservation is practiced, the ultimate conservation, that of the bank account, will follow.

BUREAU OF FARM LOANS

A bill has been introduced in Congress to authorize the creation of a Bureau of Farm Loans, as a branch of the Treasury Department. The purpose of the bureau, as proposed, would be to lend money to farmers upon the security of farm mortgages. The bill would authorize the Secretary of the Treasury to borrow money from time to time on the credit of the United States and to issue bonds at a rate not to exceed 4 percent, to provide money required to make such loans. No applicant would be permitted to contract a loan in excess of $15,000, and no loan would be in excess of 60 percent of the value of the property mortgaged. The rate of interest proposed is 4½ percent. While it is not probable that this measure will be acted upon immediately, the plan has a number of admirable features which would recommend it to the farmer public. It is a much safer plan, so far as the farmer is concerned, than some that have been suggested in the past few months. It is not expected that any definite action will be taken until the commission now investigating European banking methods has had time to report. It is evident, however, that rural credit and banking systems are to receive considerable attention at the hands of the federal government in the next few years, and farmers will do well to make a study of the general principles of the plans advocated, and study their application to local conditions.

FREQUENT CULTIVATION

Opinions on the practical value of cultivation of farm crops have changed considerably in the past few years. It was once thought that the destruction of weeds was the chief aim in cultivation. Then, unless weeds appeared, little work was done. The weeds became a positive benefit, in that they induced the helpful stirring of the soil which was needed for other purposes. Later a few farmers found that the frequent working of the ground destroyed weed seeds and prevented the later growth of these troublesome pests. It became a practice to cultivate for the purpose of destroying weeds where there were no weeds, and the crops profited by this work. As the movement of soil moisture became better understood, and since farmers have learned to appreciate the value of a dust mulch and the frequent breaking up of the capillary tubes in the soil, weeds have become a secondary consideration and conservation of moisture has become the chief aim in cultivating. The frequent stirring of the soil to maintain proper moisture conditions has solved the problem of weed growth. The Minnesota Experiment Station has conducted a series of very interesting experiments which serve to indicate the exact value of such cultivation under local conditions. While the results obtained may not be expected to be applicable to conditions in all localities, they are at least of interest as bearing on the general subject. In a series of five years, corn having no cultivation has given an average of 8.14 bu. per acre. Similar plots given two cultivations averaged 43.67 bushels per acre, while the average yield for more frequent cultivation were 47.23 bushels for three, 55.94 bushels for four, and 59.41 bushels for six. Other factors having been maintained as nearly uniform as possible, and the test running for a series of five years, it may be assumed that these results are a fair representation of the comparative value of frequent cultivation of the crop.

AGRICULTURAL PRICES

Figures compiled by the United States Department of Agriculture show that the average prices received by producers for staple crops increased 2.3 percent during the month of April, this year. This compares with an increase of 8.4 percent in the same period a year ago and an average increase of 3.4 percent for April of the past five years. As bearing on the cost of living, the figures show that farm prices in staple crops on May 1 averaged about 30.1 percent lower than on the same date in 1909. It was about four years ago that we began to hear so much about the cost of living, and farmers were supposed to be reaping such a rich harvest at the expense of the consumers. The problem of high prices to the consumer is still with us, but farm prices as a whole have steadily declined. The fact that retail prices have not shown a similar decline is another indictment against our present expensive system of distribution. The following table gives an interesting summary of the trend of farm prices during the past three years, as shown by government reports:

	May 1, 1913 Cents	May 1, 1910 Cents	Decrease Percent
Corn, bu.	56.8	63.5	12
Wheat, bu.	80.9	99.9	23
Oats, bu.	34.2	43.3	27
Rye, bu.	62.4	74.9	20
Buckwheat, bu.	71.4	71	..
Potatoes, bu. ..	48.2	38.2	*20
Butter, lb.	27.0	25.2	*6
Chickens, lb. ..	11.8	12.4	5
Eggs, doz.	16.1	18.6	15½
Hay, ton	$11.13	$12.21	10
Hogs, cwt.	7.94	9.26	16½
Beef cattle, cwt.	6.08	5.31	*12½
Calves, cwt. ..	7.38	6.54	*11½
Sheep, cwt. ...	5.16	6.10	18
Lambs, cwt. ...	6.59	7.47	13
Milk cows, each	55.34	42.22	*23½
Horses, each ..	148.00	154.00	11
Apples, bu. ...	.85	1.14	34
Wool (unwashed) lb.	.178	.223	25

*Percentage increases.

BIRD LEGISLATION

A feature of the pending tariff bill upon which all farmers should unite, regardless of political faith or belief in tariff principles, is the clause which would prohibit the importation of the skins or feathers of wild birds. The measure takes an advanced step in the prevention of the slaughter of birds for millinery and ornamental purposes, and proposes to apply the remedy where it will best serve this end. It proposes to prohibit absolutely the importation of all plumes, skins or feathers of wild birds other than ostriches, that are intended for use in millinery wear. The feather trade has long been the worst menace to wild bird life. It not only encouraged the slaughter of birds in foreign countries, but it made useless our domestic laws on the preservation of our migrating birds by offering a premium on their slaughter during the winter season. The economic value of birds to the farmer in destroying insect pests is too well and generally understood to require discussion. It has been a long fight to secure proper protection of birds in this country, but the McLean bill, recently passed, will do more to accomplish it than any other measure, and with the prevention of the importation of bird products, this country will be taking an advanced step among nations in this important and humane endeavor. Australia enacted a similar prohibitory law a few months ago, and England is now fighting the feather trade. With a few more countries dropping into line, our birds will have the protection they deserve.

HIGH-PRICED MEATS

Figures compiled by the United States Department of Commerce point to the old law of supply and demand as the direct cause of present high prices of meats. These figures show that there has been a steady decrease in the number of beef cattle in this country during the past six years. The statistics show that the increase in population in the United States from 1907 to 1913 was 11 percent, with a decrease in the number of cattle in this country during the same period of 30 percent. For the nine months ending March 31, 1907, the exports of fresh beef was 200,000,000 pounds, against only 5,500,000 pounds in the same period in 1913, and those of cattle decreased from 308,000 head to less than 14,000. Equally remarkable increases have been shown in the importation of beef cattle. Starting in 1907 with 12,500, each year shows an increase, until for 1913 the number was 222,000 head. Last year the United States exported only 9,000,000 pounds of fresh beef, as compared with an exportation from Argentine of 756,000,000 pounds. These figures should be conclusive evidence that the day of cheap beef in this country is past, and with it the day of cheap mutton and cheap pork. The situation should mean to every eastern farmer that a few grazing cattle will again be found profitable.

PENNSYLVANIA LEGISLATIVE NEWS

Drawing to a Close.—Another month will probably see the close of the legislative session of 1913, notable for the vast amount of legislation proposed and for the important measures before it. The date for adjournment has not been set, but the general assembly will probably cease its labors before the middle of June. The appropriation measures for the charities, always held back until the general legislative program is made up, have commenced to appear in the house, and another 10 days will see them on the desk of the governor. The question is how much care has been exercised in considering them. From estimates $65,000,000 is the outside limit for appropriations, but it is very probable that the sum total will go beyond. The state must provide for education and highways, as well as general state government and the fostering of its agricultural interests as well as a multitude of charities. The public service commission, workmen's compensation, women and children's labor, education law reforms and various other measures so much discussed in advance of the session are still in the making, but hope is held out that they will be enacted. Politics has unfortunately entered into the deliberations of the lawmakers to a greater extent than usual, but there is opportunity to accomplish much for public benefit.

Taxation Problems.—One of the regretable matters in connection with the session is that the revenue measures have not been passed long ago. As everything is based upon them, prompt steps to get them into the Governor's hands should have been taken. Yet only a few have passed the house, and interests which oppose additional levies are fighting a last battle in committee to prevent enactment. This is preventing action on other measures and will cause a rush in the next three weeks. This rush, however, will be in the senate this year. The house has finished most of its work and it will simply have to act on senate bills and eleventh hour house measures. Most of the house members now reconize that there it but little chance for house bills not passed in the next 10 days, and they are taking steps to make a clean up this week. More bills have been presented in the house alone this session than in the whole legislature of 1907, and about 500 will not receive much consideration because of lack of merit or of desire on the part of their sponsors to make issues of them.

Agricultural Acts Signed.—During the past week substantial progress was made for the betterment of the agricultural industry. In addition to estimating cost and providing for vocational education, the Governor signed the Gibson bill to allow counties to make appropriations for agricultural extension and the North bill for 10 agricultural experts. The Gibson bill permits counties to unite with the national government or State College in extension work, appropriations being limited to $1,500. Offices may also be provided in the court house for such co-operative work. The bill to appropriate $100,000 for State College to assist in this co-operative work is still in committee. The North bill, an administration measure, will enable appointment of 10 men to go about the state giving practical advice where asked by farmers and land owners. The instructors are to be under control of the Secretary of Agriculture, and $10,000 is appropriated for the salaries and expenses. The act takes effect June 1.

New Senate Bills.—In spite of the lateness of the session new legislation continues to appear in the senate, and several measures of interest to agriculture have made their appearance. These include the administration bills to give greater control over water supplies, the construction of dams and the survey of the water resources of the state. Another bill authorizes counties to have eminent domain in securing water supplies for almshouses, hospitals or jails maintained by counties whether within or without the counties, provided the owner shall not be deprived of the free use for domestic, dairy or farm stock purposes. Another bill provides that in the sale or transfer of any domestic animal for slaughtering purposes there shall be, in the absence of an express agreement to the contrary, an implied warranty as to the good health and soundness of such animal. A bill which will affect all persons handling food specifically prohibits the exposure of meat or meat products to any insects; prohibits feeding to swine of any offal, blood, slaughter house refuse or carrion, and gives the State Live Stock Sanitary Board authority to carry out inspections, the

The Daughter of David Kerr

By HARRY KING TOOTLE.

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PRECEDING CHAPTERS

The city of Belmont is a typical middle-western village, under the rule of the political "boss," David Kerr. The daughter, Gloria, had spent her girlhood away from home and knew nothing of her father's profession or business affairs. Supposing him to be a wealthy real estate merchant and a leader in Belmont society, she came home to take her place in the best circles of the town. To gratify her wish and continue the deception, David Kerr secretly secured the services of Judge Gilbert to introduce and assist Gloria in establishing herself in society. In return Kerr promised to give the full weight of his political influence to secure the passage of a questionable street railway franchise, the money coming from such influence going to Gilbert. Joe Wright, recent purchaser and editor of the Belmont News, met Gloria while traveling abroad. He had fallen in love with her before he was aware that she is the daughter of David Kerr. Since coming to Belmont he found that it was necessary to oppose the "boss" thru the News, and he took up the fight on the street railway franchise, the very measure which was purchasing the services of Judge Gilbert in Gloria's behalf. The opposition of the News threatened the success of the franchise project and the defeat of the ring in the approaching election. To save the "machine" and his political friends, Kerr decides to purchase the News.

CHAPTER XII

When Gloria found that the Presbyterian Mission was in need of money in order to extend its work, she suggested to Mrs. Hayes that they go among their friends, explain the situation and ask for money for their charity. One of the first upon whom they called was Judge Gilbert. Williams explained that the judge was busy for a few minutes and asked them to be seated. He did not know if the men cared to be bothered with mere women on such a day.

When Williams announced that Miss Kerr and Mrs. Hayes wished to see him, Judge Gilbert asked Kerr if he knew the meaning of the visit.

"They got some sort o' mission work they're beggin' for. It's just a polite shake down."

"I didn't know she had taken it up that seriously. I just thought she went down with Mrs. Hayes out of curiosity."

"Women is queer creatures, Amos. Gloria's spendin' lots of her time with Sam's wife savin' souls. You're in for it. She got me to subscribe a hundred dollars. Wanted my name to head the list. I told her to put me down as Cheerful Giver. Said I was castin' bread on the water without any hope o' gittin' it back. Them mission things is usually fakes."

The boss's further opinion concerning settlement work was not voiced because, while Kerr was talking, Judge Gilbert had telephoned Williams to usher Mrs. Hayes and Miss Kerr into the library.

Followed by the other men, Gilbert advanced to meet them, and after the usual greetings had been exchanged offered them chairs.

"You must pardon us," began Mrs. Hayes. "We did not expect to find you so busy. To tell the truth, we didn't expect to find two persons here whom we have already visited." She looked at Kerr and her husband.

"I'm the Cheerful Giver," said Kerr with a humorous grimace which pretended to show that the donation was not so cheerfully parted with.

"I'm not so cheerful, but I was a giver," added Dr. Hayes.

"I told Judge Gilbert to lock the safe, that I knew you would be after money," Kerr continued.

"Highway robbers, I call them," was Dr. Hayes's testimony this time.

"A bad reputation they've given us, Judge Gilbert," laughed Gloria, "and we don't deserve it, indeed we don't."

Kerr walked into the private office and Gilbert, catching his eye, followed him. The boss said something; Gilbert looked at the women and then nodded his head in assent. Dr. Hayes, also catching the boss's eye, strolled away from the group casually as the judge rejoined it. A word with him was all that Kerr required. The master of Locust Lawn was setting the stage with an eye that overlooked no detail. There was too much at stake for him to neglect to interpolate anything effective which chance might throw in his way.

As the two men walked back into the the library, Mrs. Hayes was saying:

"Dr. Hayes and I have had quite an argument, and here are the lawyers Gloria, who can settle the question for us. Can a woman steal from her husband, Mr. Kendall?"

Kendall knitted his brows in perplexity. "Really, Mrs. Hayes, that is a question I shall have to take under advisement."

"But a man can steal from his wife," Gloria put in. There was a general laugh at this which she did not relish. "I'm talking seriously. If it weren't so, we mightn't be here begging money."

"So you are after money," said Judge Gilbert lightly. "Then you must tell me why I should contribute to keep men from stealing from their wives, you who have no one to steal from you."

Gloria was not to be diverted from what she had to say. These men to whom she was talking represented to her what was best in Belmont, what was best in manhood. She wished them to see the truth as she saw it.

"It isn't that kind of stealing," she went on: "it's worse than that. Till I went with Mrs. Hayes to visit the mission I had no idea of the degradation and misery in a town even like Belmont. When I say men steal from their wives I mean they take the money they should spend on their families and spend it for whiskey and gambling.

"I think it's a shame that such men as you, Judge Gilbert, and you, Dr. Hayes, and you, father, of all persons, permit such things to happen here in Belmont. I wish I were a man!"

"You can't keep people from spending their money," said Kerr, as he looked at his watch.

Dr. Hayes caught the slight nod the boss gave, and said something to his wife. Then, interrupting the discussion, he said to Gloria:

"I'm already on the list of cheerful givers, Miss Kerr, and I'm going to ask if you'll let me carry off Mrs. Hayes for half an hour or so."

"But I'm only assisting her," she replied in surprise.

"You can tell Judge Gilbert about it even better than she can. I know how it is when married ladies come to my office and when unmarried ladies come."

"Yes," laughed him wife, "he keeps me poor, contributing to things that are none of our business just because pretty girls come in and he can't refuse them. Dr. Hayes says we won't be long, Gloria. You don't mind, do you?"

"Of course not. Where shall I meet you?"

"We'll come back here."

Gloria turned from saying good-by to Mrs. Hayes to find only her father in the room with her. Kendall and Judge Gilbert had withdrawn to the latter's private office.

"Where's Joe Wright been keepin' himself?" asked Kerr suddenly.

The girl did not betray the slightest interest in the question. She took her time about answering, and when she spoke it was in the most nonchalant manner.

"Mr. Wright? Oh, he's in Belmont."

"You don't go with him like you used to. He ain't been to Locust Lawn once."

"He says he's busy when I see him. I meet him occasionally."

"I thought you and him was good friends."

"Oh, we are."

Altho she answered his questions in an off-hand manner, her father was not deceived. From what he had been told and also from what he had observed, he felt that his daughter had a genuine regard for the owner of the Belmont News. Of its depth he could not decide.

"He ain't been near you for a long time."

"I'm not bothering about him. I'm not bothering particularly about anyone."

The girl was glad that at this moment Judge Gilbert came from his private office. Her father was questioning her about matters she preferred to keep to herself.

"If Miss Gloria can spare you, Mr Kerr," said the judge, "Mr. Kendall would like to see you in my office. I've come back to be persuaded that I ought to join the cheerful givers."

"I'll tell Kendall, Gloria,that he's got to join the lodge," were Kerr's parting words as he went into the inner office.

Remembering that Miss Kerr had not been given the chance to explain her visit fully, Judge Gilbert took a chair beside her and said:

"Now I'm at your service, prepared to believe the most terrible things about our fair Belmont."

"When you talk like that, Judge Gilbert, I'm afraid you're laughing at me."

Of late Gloria's seriousness had far outweighed her old mood of joyousness, and she now insisted upon being taken seriously.

"You've lectured me so for being shocked at what I've found that I'm afraid to say any more."

Judge Gilbert was seeking in his mind for some plausible reason to advance which would be sufficient to remove Gloria from the work she had undertaken, when Williams entered.

"I beg your pardon, sir," said the secretary, "but Mr. Wright is here."

"Mr. Wright!" exclaimed Gloria. She almost rose from her seat, but feeling the eyes of the lawyer upon her, sank back again and tried to appear quite at her ease.

"Tell him I'll see him in a minute."

"Yes, sir."

Williams went out, and left Gloria feeling as if she were on the stand, a witness in her own defense. She was provoked because she knew the attorney had heard her exclamation. Something within her made her wish to rush away. But this wish in an instant gave place to one more ardent. She would see him, speak to him, learn the truth from his own lips if he were man enough to speak and then go away forever. Deep down in her heart, however, she heard a whisper out of the leaves of their "birthday book," words he had whispered:

Spring in the hills, Beloved,
  On the side of a meadowed slope;
And love in our hearts, Beloved,
  Love and Spring and Hope.

CHAPTER XIII

Wright had no means of knowing what it was Judge Gilbert had to propose to him, but he felt certain that it had some connection with his newspaper and with the campaign now ending in a lurid blaze of political pyrotechnics. Gloria Kerr was the last person he would have thought of meeting in Gilbert's office. He had promised himself that after the election, no matter whether it went his way or not, he would see her and make his excuses for not having had the time to be with her as he had wished. He would also begin to look about for a purchaser for the News. He hoped he would have no difficulty in getting Gloria to leave Belmont. Then for the new life with her where they could be ever together, one in heart and hope and happiness.

When Williams told Wright that Judge Gilbert was ready to see him, he opened the door and saw the lawyer advancing to meet him with extended hand. The adviser of Belmont corporations knew the value of a handshake and a cordial greeting. It made a visit to his office take on the air of a social affair.

"I'm so glad you came," he said to the editor, shaking hands heartily.

"I came as soon as I could." Wright was not going to be outdone, and therefore used his most genial tone, altho the shaking hands on his side was a perfunctory performance. He knew Gilbert's real attitude, and undue cordiality under the circumstances savored too much of the Greeks bearing gifts.

"Miss Kerr and I have just been speaking of you."

"What!" exclaimed Wright. Looking past the judge, for the first time he saw Gloria. At mention of her name the girl rose from her chair. She really thought she merely wanted to speak to him, once more look into his eyes, and then take her departure.

At sight of her, Wright stepped forward and said, "How do you do, Miss Kerr? It's a great pleasure to see you. I certainly did not expect to find you here."

They shook hands in rather a constrained manned, Gilbert watching them closely the while.

"Naturally not," she replied. "I came to see Judge Gilbert on a matter of business and am just leaving." Despite herself she could not help adding, "My friends find me most of the time at Locust Lawn."

Something in her manner brought the lawyer at once into the conversation with a turning of the subject.

"I couldn't tell you very well over the 'phone what I wanted," he explained to Wright. "It'll be a little while before I can talk to you. I need a few minutes more to ascertain fully the wishes of my clients."

The conversation was so business-like that Gloria forced herself to say:

"I must be going. Please don't let me keep you from your work."

But at this Gilbert held up his hand appealingly and begged, "Please don't go. I want you to do me a favor. Wait for Mrs. Hayes. Until I've finished this conference, won't you be so good as to act as hostess here and entertain Mr. Wright?"

"Really, Judge Gilbert, I——"

"I'm sure Mr. Wright wishes it." He interrupted her because he did not know what she might say, and he knew his remark would bring from the newspaper man a request that she remain.

"I wouldn't have Miss Kerr make a martyr of herself," Wright said with quiet dignity, "but if she would be so kind——"

"Didn't I tell you," the judge said to the girl. "Not a word. You must take my place until I return. If you'll pardon me, I'll be with you again in just a few minutes."

There was no time for them to protest. He slipped into the office where Kendall and Kerr were closeted,

and closed the door quietly after him.

The situation was not without its embarrassment. Taking into consideration everything which had happened in the last month, there was little wonder that each felt constrained. In addition to that, Gloria felt as if she had just been figuratively thrown at his head. To a high-spirited girl this in itself was mortifying. They sat without a word until the silence became painful. Wright was desperate. Here was the one woman in all the world, and he was afraid to open his mouth. At last he mustered sufficient courage to remark:

"Beautiful spring weather we're having."

This remark served only to punctuate the silence. It seemed to him, from the length of time before she replied, that Gloria was mentally inspecting the records of the weather bureau for the last twenty years.

"Yes," she said, a word that did not appear so ponderous as to require all that time to bring it forth.

This did not prove conducive to further conversation. He felt that the weather had not been exhausted by her voluble reply, however, and used it again.

"They tell me it's liable to be bad for another month."

Again Gloria seemed to make a mental survey of all the weather records for the last twenty years. Wright had almost forgotten what he had said when she at last gave the conversational footfall a dainty kick by saying:

"Yes."

This time he was ready for her. His embarrassment was wearing off and he began again promptly:

"Don't the rains make the road pretty bad out your way?"

"My friends manage to get out to see me."

This was a chill rejoinder, and Wright felt he had lost several points in their game of indirection.

"Locust Lawn is quite a distance out," he ventured.

"Not far enough to discourage my friends."

This goaded him to an apology. He regretted that she was not making it easy for him, but he forgave her because he knew she did not understand. Nor could he yet trust himself to explain all.

"Because I've been so busy, please don't think that I'm discouraged."

"Why should I think of it at all?" she replied with spirit.

Her remark hurt him, both her words and her manner of speech. It tore away his reserve and made him burst forth in protest.

"That's not like you, Gloria. We've been such good friends."

"We have been good friends," she admitted promptly. "Is there any reason, Joe, why we should not be now?"

His heart beat high within him at her words. They were so direct, so honest, so like the one woman of his dreams. It grieved him that he could not be as direct with her; but that was impossible, for over them was the sinister shadow of David Kerr, her father, the boss of Belmont.

"There's no reason why we shouldn't be good friends, Gloria. What put that idea into your head?"

"My circle of friends in Belmont seems to have grown smaller and smaller."

"Please don't put me on the outside."

"You seem to have put yourself there."

The conversation lagged. There was so much to think about. Gloria was seeking to reconcile his explanations with her own observations. Looking at him closely she saw that he did not have that fresh, robust look which a month ago had made him seem fit for a gladiatorial contest. As he sat in the big office chair he seemed to relax with fatigue. His face was thinner, and there were little lines of worry about his eyes. Between his brows and on either side of his mouth were to be seen creases which the girl thought proclaimed to the world his strength of character. A month ago she had not noticed them. She had felt sure he was such a man, but the wrinkles, confirming her belief, could almost be called a source of joy to her. They had made away with some of the youthfulness, but in his face she now saw something which more than compensated. It had greater strength now, strength such as was written on her father's countenance.

"You look tired." Her low, sympathetic tones and her solicitous look did what nothing else could do. They melted his stern purpose to bear it all in silence for yet a few days into a desire to take her as much as he dared into his confidence. With a woman's quick perception she would understand that he was unhappy. Her sympathy and her confidence in him would nerve him to fight the good fight as nothing else could and his heart was stirred by the possibility.

"Yes," he admitted, "I'm tired and sick at heart."

"Why don't you take a vacation? Go to Europe."

"I can't pick up and run away like that; but I'd do it anyway if it would bring back the dear old days."

"The days I knew?" the girl made bold to ask.

"The days you made so—delightful."

"Can they be gone forever?"

"You mean——" Wright did not dare to put his hope in words.

Carried farther than she had intended, Gloria beat a retreat by saying:

"Who knows? We may meet in Paris again some day."

"Some time soon, I hope. I'm sick and tired of it all here, Gloria. Today it has seemed like the game isn't worth the candle. What do you think?"

"I'm all in the dark, too," was her confession. Slowly and surely in the shadow of her shattered hopes and his unhappy conflict of duty and desire were they being drawn closer together than ever they had been when they laughed with the spring and dreamed of the days to come in a radiant sunshine of unwhispered love.

"I don't know what to think," Gloria went on in a low tone. "I don't seem to understand Belmont."

"Why don't you go away? Don't you want to?"

"What for? I know the life out there." She made a sweeping gesture which seemed to encompass all the world outside the four walls which shut them in together. "It wouldn't really satisfy me any more to live as I used to live."

"Yet your life here—" He left the rest to her.

"No, this doesn't satisfy me either."

"In a word, Gloria, you're not happy."

Instead of replying directly, she asked with a dropping of her hands to her sides in a hopeless fashion:

"Is anybody in the whole world happy? Are you happy?"

"Don't you think I am?"

"I'm afraid not."

The appealing way she looked at him, her whole soul welling up in her eyes, brought him to his feet and set him pacing nervously up and down. He looked fatigued, distressed, beside himself with care. She forgave him everything but his studied refusal to let her share whatever weighed upon him. Could he not see, she thought, how she yearned to tell him that whither he went there she would go also, that his joys would be all her joys and that his burdens would be divided with her, that love divided all sorrow and doubled all joy.

(To be continued.)

THE UNKNOWN DEAD.

Above their rest there is no sound of weeping,
  Only the voice of song-birds thrills the air;
Unknown their graves, yet they are in God's keeping,
  There are none "missing" from His tender care.

He knows each hallowed mound, and at His pleasure
  Marshals the sentinels of earth and sky;
O'er their repose kind Nature heaps her treasure,
  Fanned by soft winds which 'round them gently sigh.

Bravely they laid their all upon the altar,
  Counting as naught the sacrifice and pain,
Theirs but to do and die without a falter—
  Ours to enjoy the victory and the gain.

They are not lost; that only which was mortal
  Lies 'neath the turf o'erarched by Southern skies;
Deathless they wait beyond the heavenly portal,
  In that fair land where valor never dies.

In the great heart of coming generations
  Their fame shall live, their glory never cease:
Even when comes to all earth's troubled nations
  God's perfect gift of universal peace.

Home and home life must never become commonplace. The little surprises, the remembrance of the birthday, the unexpected treat, the pleasure earned for one by the sacrifice of another—all these belong under our head of spiritual existence. Nor is there any scene of our life which so demands such exercise as this familiar scene of home, which has to be reset every day. —Edward Everett Hale.

Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., May 19, 1913.

The receipts and demand for butter have increased. Prices have remained steady with good trading. Eggs of good grade were firm. Receipts are largely of unattractive stock. The demand for dressed poultry was fair and prices remained steady.

Butter.—Western creamery, 31c; extras, 29c; firsts to seconds, 27@28½c; special prints, 35@38c; near by prints, 32c.

Cheese.—New York full cream, 17@17¼c; skims, 8¾@11c, according to quality.

Eggs.—Candled, 22½@24c doz.; extras, 21½c. Current receipts at $5.70 per standard case.

Poultry.—Fowls, 17½@18½c; old roosters, 12c; spring chickens, 30@32c; ducks, 13@14c; pigeons, 30@32c.

Dressed Poultry.—Western fowls, 18@19c; roosters, 14½c; chickens, 18@19c; turkeys, 20@25c.

Vegetables.—White potatoes, choice, 68@70c bu. Onions, 75c@$1.00 bag. Cabbage, $1.25@1.75 crate. Lettuce, $1.25@2.00 basket. Cucumbers, $2.00@2.50 basket. Celery, $1.00@1.50 bch. Spinach, $1.25@2.00 bbl. Kale, 25@50c bbl. Egg plant, $1.75@2.25 box. String beans, $1.50@2.00 bu. Peas, $2.50@3.00 basket. Peppers, $1.50@2.50 carrier. Tomatoes, $1.50@2.50 carrier. Watercress, $1.00@1.50 100 bchs. Asparagus, 6@15c bch. Beets, $3.00@4.00 per 100 bchs.

Fruit.—Apples, choice varieties, 25@75c hamper, $2.00@3.50 bbl. Cranberries, $1.25@2.00 crate. Strawberries, 9@11c qt.

Hay and Grain.—No. 1 timothy, new, $17.50@18.00; No. 2, $15.00@16.00; No. 3 do., $12.00@13.00. No grade, $8.00@10.00. Clover mixed No. 1, $13.50@14.00; No. 2 do., $11.00@12.00. No. 1 tangled rye straw, $14.00@14.50; No. 1 wheat straw, $10.00@10.50; No. 1 oat straw, $10.50@11.00. New shelled corn, No. 2 yellow, 63½@64c; No. 3 yellow, 62@62½c. No. 2 red wheat, $1.01@1.02; No. 3 do., 96@97c. No. 2 white oats, 44@44½c. Standard white, 43½@44c; No. 3 white, 42½@43c.

Hides and Skins.—Steers, abattoir, 15@16c; do. country, 13½@14c. Cows, abattoir, 14½@15c; do. country, 13½@14c. Bulls, abattoir, 12@12½c; do. country, 11¼c. Calf skins, Nos. 5 to 12 and up, $1.40@2.50; do. green, 13@14c lb.

Seeds.—Timothy, $3.15@3.25 bu.; clover, white, $25; do. crimson, $6.25; do. mammoth, $14.50; do. sweet, $13.00; do. alsike, $13.25; red top, per bu., $13.50; alfalfa, $7.00@10.00; Canada field peas, $2.35; vetch, $8.50; rye, winter, $1.37; spring, $2.25; soy beans, $3.25; barley, $2.50; buckwheat, $1.50; cowpeas, $3.00@3.25; millet, $1.90@2.75; oats, $1.25.

Coffee.—Rio, 7s, 11⅝c; Santos, 4s, 13½@13⅝c. Mild Coffee—Cordova, 14½@17c.

Provisions.—City beef, smoked and air dried, 24@25c. Beef hams, 33@34c. Pork, family, $21.00@22.00 bbl. Hams, cured, 15@16c; skinned, 15⅛@15⅞c; smoked, 18@20c. Other hams, smoked, city cured as to brand, 17@19c. Picnic shoulders, 10@10¾c; do. smoked, 13@13½c. Bellies in pickle, 15½@16¾c. Breakfast bacon as to quality, 19@23c. Lard, refined, 11¾@12½c; do. in tubs, 11½@12c; do. kettle rendered, 11¾@12c. Tallow, prime city, 6¾c; do. country, 6¾c; do. dark, 5¾c; do. cakes, 7¼c.

Sugar.—Cut loaf, $5.15 cwt.; cubes, $4.60; powdered, $4.45; granulated, $4.35; standard granulated, $4.40; crystal A, $4.35.

Flour.—For 196 lbs., in wood, winter clear, new, $4.15@4.40; do. straight, new, $4.50@4.65; favorite brands, $5.25@5.60. Rye flour, Penna., $3.50@3.75.

BALTIMORE PRODUCE

Baltimore, Md., May 19, 1913.

Butter remained steady during the week. Only the best grades are in strong demand. Under a limited supply of fresh eggs prices advanced over last week's quotations. Live poultry was steady with fair trading. Vegetables were a little more active than last week and prices were about steady.

Butter.—Creamery, fancy, 30@30½c; do., choice, 28@29c; prints and blocks, 30@32c; Maryland and Penna. rolls, 22c; prints, 21@22c. Process, 28@29c.

Cheese.—Flat, 17½c; Daisy, 18@18½c.

Eggs.—Md. and Penna., firsts, 18½c; western, 18½c; southern, 17½c.

Live Poultry.—Hens, 17½c; chickens, 30@32c; old roosters, 11c. Ducks, 13@15c. Geese, 14@15c. Guinea fowls, 20@30c.

Dressed Poultry.—Turkeys, 24@25c; chickens, 20@21c; roosters, 11@12c; ducks, 20@22c; geese, 11@17c.

Vegetables.—Potatoes, white, 60@65c bu. Sweets, $3.00@4.00 bbl. Cabbage, $1.50@1.75 crate. Danish, $6.00@8.00. Onions, 80@90c crate. Lettuce, 75c@$1.25 bushel. Egg plant, $2.25@3.00 crate. Peppers, $1.50@2.00 crate. Squash, $1.25@1.50 crate. Spinach, 25@30c box. Cucumbers, $2.00@2.25 basket. Beans, green, $1.25@1.50 basket. Celery, $2.50@3.75 crate. Turnips, 10@15c box. Cauliflower, $2.50@2.75 bbl. Horseradish, $1.50@1.65 box. Beets, 3@4c. Asparagus, $1.75@2.25 doz.

Fruit.—Apples, new, $2.00@3.50 bbl.; 50c@$1.00 bu. Strawberries, 5@8c qt.

Grain.—Wheat.—No. 2 red western, $1.08¼; spot, $1.08¾. Corn, spot, 59¾c; contract, 59¾c. Oats, No. 2 white, 41c; standard white, 43½c; No. 3 white, 42½c. Rye, 60@65c.

Hay and Straw.—No. 1 timothy, $19.50@20.00. No. 2 timothy, $17.50@18.50. No. 3 do., $14.00@15.50. Choice mixed, $16.00@16.50. No. 1 clover, $11.50@12.00. No. 2 do., $9.00@10.00. No. 1 tangled rye straw, $11.00@12.00. No. 1 oat straw, $9.00@10.00. No. 1 wheat straw, $8.00.

Millfeed.—Spring bran, $21.50@22.00; Middlings, flour to white, $26.00@28.00; western middlings, $22.50@23.00; city mills mids., $24.00@24.50.

YORK PRODUCE

York, Pa., May 19, 1913.

The attendance at the various markets was normal last week while the trading was generally brisk. The continuous cold and dry weather has considerably lengthened the time between the hot bed produce and that grown in the open, so that the demand for onions, radishes, lettuce, etc., is great and prices good. York County will have only 25 per cent of a crop of cherries, strawberries, blackberries and raspberries, owing to the heavy frosts.

Butter.—Country, 33@35c; separator, 32@36c. Milk, 6c per qt.

Eggs.—18@19c.

Poultry.—Hens, 15c lb. Dressed poultry, 40@80c each.

Vegetables.—Potatoes, 8@10c half peck; 50@60c bu.; cabbage, 2@6c each; lettuce, 3@10c; beets, 3@5c bch.; radishes, 4@6c; onions, 3@5c bch.; lima beans, 10@14c qt.; soup beans, 7@10c qt.; sweet potatoes, 12@15c per ½ pk.; parsnips, 10c per ½ pk.; sauer kraut, 5@7c qt.; lard, 12@15c lb.; celery, 3@7c; rhubarb, 5c bunch; asparagus, 5@7c bunch.

Fruit.—Apples, 15@30c a half peck; strawberries, 10@15c box.

Retail Grain Market.—Wheat, $1.17; corn, 75c; oats, 50c; bran, $1.15 a cwt.; rye, 65c; middlings, $1.35 a cwt.

Wholesale Grain Market.—Wheat, $1.07; corn 63c; oats, 39c; rye, 55c.

BUFFALO PRODUCE

Buffalo, N. Y., May 19, 1913.

Butter.—Steady. Creamery, choice, 29c; choice dairy, 27@28c.

Cheese.—Steady. Fancy, 17½@18c; good, 16@18½c.

Eggs.—Firm. State, fresh, 20@21c; western, 19@20c; mixed, 20@21c.

Dressed Poultry.—Active. Turkeys, per lb., 22@24c; fowls, fancy, 17@19c; chickens, 16@20c; old roosters, 14@15c; ducks, 21@24c; geese, 17@18c.

Live Poultry.—Steady. Chickens, 15@18c; ducks, 21@22c; geese, 15@17c; turkeys, 22@23c; old roosters, 13@14c.

Vegetables.—Potatoes, firm. Home-grown, 58@60c bu. Cabbage, $1.90@2.50 crate. Onions, 60@75c sack. Beans, green, $3.25@3.75 hamp. Turnips, $1.00@1.25 bbl. Celery, 80c@$1.00 doz. Spinach, 40@50c hamp.

Beans.—Quiet, steady. Marrow, fancy, $3.35@3.40; medium, $2.30@2.50; red kidneys, $2.00@2.25.

Fruits.—Apples, $2.25@3.00 bbl; 50@75c bu.

Honey.—Firm. No. 1 fancy, 16@17c; No. 2 new, 13@15c; dark, 12c.

Hay.—Firm. Timothy, choice, on track, $17.00@18.00, No. 2 do., $16.00@17.00; No. 3, $14.00@14.50; light mixed, No. 1, $13.00@14.00; rye straw, $10.00; oat and wheat straw, $9.00@9.50.

Feed.—Steady. Spring bran, $20.00 ton. Standard mids., $20.50. Corn meal, $21.50. Gluten, $24.50. Hominy, $24.00. Oilmeal, $27.50. Cottonseed meal, $32.00.

NEW YORK PRODUCE

New York City, May 19, 1913.

Butter remains about steady. Receipts are fairly liberal and the demand is just enough to absorb the good grades. The demand for eggs is only for fresh stock. Other grades are inactive. Dressed poultry is in moderate demand and limited receipt. Prices remain about as last week. Potatoes are in liberal supply and lower. Other vegetables are about steady.

Butter.—Creamery firsts to extras, 27½@29c; thirds to seconds, 26@27c; factory, 25@26c; state dairy, 25@28½c; packing stock, 21@23c; process, 27@28c.

Cheese.—Whole milk, specials, 13@13¼c; do. common to fancy, 12@13c, skims, 5@10c.

Eggs.—State and near-by 21@24c; fresh gathered, 11@23c; mixed, 20@22c.

Dressed Poultry.—Turkeys, dry, 18@19c; chickens, Penna., 28@32c; fowls, 14@19½c; old roosters, 14½c; ducks, 15@20c; roasters, 19@22c.

Live Poultry.—Fowls, 18c; chickens, 18c; old roosters, 12½c.

Grain.—Easy. Wheat, No. 2 red, nominal. No. 1 Northern, $1.00½. Corn, 61¼c. Oats, standard white, 44½c.

Vegetables.—Potatoes, state, $1.75@2.15 per 168 lb. bag. Cabbage, 75c@$1.25 crate. Green beans, $1.00@1.50 basket. Carrots, 75c@$1.00 bag. Cucumbers, 50c@$1.00 doz. Lettuce, $1.50@3.00 bbl. Squash, 75c@$1.25 basket. Celery, $1.00@4.00 case. Horseradish, $1.00@3.00 cwt. Parsnips, 50@75c bbl. Turnips, 35@75c. Watercress, $1.00@1.50 per 100 bunches.

Fruit.—Apples, $1.75@4.00 bbl., according to variety. Strawberries, 3@12c qt.

WASHINGTON PRODUCE

Washington, D. C., May 19, 1913.

Eggs.—Near by, fresh, per dozen, 20c, southern, per doz., 19c.

Cheese.—New York, new, per pound, 16½c; flat, 16½c.

Butter.—Best prints, per pound, 32c; tub, 31c, process, 29c; undergrades, 25c.

Live Poultry.—Hens, per lb., 16@17c; roosters, 10c; springers, 30@32c; turkeys, 16@17c; geese, live, 10@12c; ducks, 15@16c.

Vegetables.—Potatoes, bbl., $1.00@1.50, 70@80c bu. Onions, $1.00@1.25 crate. Lettuce, per basket, 50c@$1.25. Beans, $2.00@2.50 basket. Peppers, per crate, $1.50@2.50. Egg plants, per box, $1.50@3.00. Squash, per bbl., $1.50@2.25. Beets, $1.50@2.00 per 100 bchs. Mushrooms, per lb., 65@75c. Carrots, 2@4c bch. Cabbage, $1.25@1.75 crate. Radishes, 50c@$1 per 100. Cauliflower, $1.00@2.00 crate. Asparagus, $1.25@2.50 doz. Apples, $1.50@4.50 bbl. Strawberries, 10@15c box.

WILMINGTON PRODUCE

Wilmington, Del., May 19, 1913.

Fruits.—Apples, 50@80c basket; $2.50@4.00 bbl. Strawberries, 11@18c box.

Vegetables.—Potatoes, 65@75c bu.; new, $4.25@6.00 bbl. Cabbage, $2.00 crate; 25c bas. Onions, 40c bas. Celery, 60@85c doz. Spinach, $1.25 bbl. Sweet potatoes, 75c basket; $2.50 bbl. Kale, $1.25 bbl. Lettuce, $1.50 basket. Asparagus, $1.50@2.00 doz.

Poultry.—Chickens, live, 18@20c.; do., dressed, 20@22c. Ducks, 13@14c lb., dressed, 20c.

Eggs.—19@21c.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., May 19, 1913.

The cattle market during the past week was weak and a shade lower on the top grades.

	Beef Cattle	Sheep and Lambs	Hogs
Total for week	1,804	10,024	4,038
Previous week	3,091	11,291	4,328

Best steers	$8.40@8.50
Choice steers	8.30@8.40
Good	8.00@8.25
Medium steers	7.75@8.00
Common steers	7.25@7.50
Bulls	6.50@7.25
Fat cows	4.50@6.50
Thin cows	3.00@3.75
Milk cows	40.00@65.00

Veal calves steady.

Best calves	$10.00@10.50
Good to choice do.	9.50@10.00
Good to choice do.	9.00@9.50
Medium	7.00@8.00
Common do.	6.50@7.00
Thin do.	5.00@8.00

Sheep and lambs are steady.

Extra wethers	$6.00@6.25
Choice wethers	5.50@6.00
Good wethers	5.00@5.50
Common to medium	3.00@5.00
Ewes, fat	5.00@5.50
Extra lambs	9.25@9.50
Good to choice do.	9.00@9.25
Common to medium	6.00@8.50
Early spring	8.00@10.50

The hog market continued steady thruout the week at $12.00@12.25.

City Dressed Stock.—Choice classes of dressed meats are steady. Trade is normal. Steers, 13@14c; heifers, 10@13c; cows, 8@11½c. Veal calves, 14@16c; country dressed calves, 14@15c; extra do., 15½c. Sheep, 11@13c; extra wethers, 14c. Spring lambs, 16@17c. Hogs, 12¼@12½c.

PITTSBURGH LIVE STOCK

Pittsburgh, Pa., May 19, 1913.

The cattle market was active the greater part of last week, with advances of from 10 to 15 cents per cwt. Choice fat cattle, both light and heavy, were in best demand. Bulls and fat cows were easier; heifers were about steady. Best fresh cows were stronger; other grades and springers were steady. Today's receipts were 115 carloads. The market was slow and 10 to 20 cents lower.

Good to choice	$8.40@8.50
Good, 1300 to 1400 lb.	8.30@8.40
Medium to good, 1200-1300 lb.	8.20@8.35
Tidy, 1050-1150 lb.	8.10@8.25
Fair to medium, 900-1100 lb.	7.75@8.00
Common to good fat oxen	5.00@7.00
Common, 700-900 lb.	6.00@7.25
Common to good fat bulls	5.00@7.75
Common to good fat cows	4.75@7.25
Heifers, 700 to 900 lb.	5.50@8.00
Bologna cows	4.00@4.40
Fresh cows and springers	20.00@80.00

Veal calves were in good demand all week, and the market closed 50 cents per cwt. higher. Today's receipts were 900 head and the market ruled steady.

Heavy and thin calves	$4.50@7.00
Veal calves	8.00@10.00

Hogs were in liberal supply all of last week, and prices advanced steadily until Friday, when there was a drop to the basis of Monday. Today's receipts were 60 double-deck loads. Heavy hogs sold steady, but others were 10 cents lower.

Prime heavy	$8.70@
Prime medium weights	8.80@
Heavy mixed	8.75@
Best heavy Yorkers	8.80@
Light Yorkers	8.80@
Pigs as to quality	8.75@8.80
Common to good roughs	7.00@7.75
Stags	6.25@6.75

Sheep and lambs have been in liberal supply and good demand. Prices closed strong. Spring lambs have been in light supply and in good demand. Today's receipts were 50 double-deck loads. Sheep sold 10 cents lower and lambs 25 cents lower, and were active at this decline. Spring lambs sold steady.

Prime wethers, clipped	$5.50@5.65
Good mixed	5.25@5.50
Fair mixed ewes and wethers	4.50@5.10
Culls and commons	2.50@4.00
Spring lambs	7.00@10.00
Culls to choice lambs	4.00@7.75

BUFFALO LIVE STOCK

Buffalo, N. Y., May 19, 1913.

Trade in cattle was slow all last week with prices about steady at Monday's quotations. Today's receipts aggregated 150 carloads of cattle. The market was lower.

Choice heavy steers	$8.25@8.50
Medium	7.25@8.20
Yearlings	8.50@8.75
Plain heavy	7.75@8.00
Handy butchers	6.75@8.00
Good to choice fat cows	6.25@7.00
Good to choice heifers	7.25@7.75
Butcher bulls	7.00@7.50
Feeders	6.00@7.60
Stockers	4.75@6.25
Cows and springers	35.00@80.00

The calf market was irregular all last week with only a fair demand. The week closed stronger with prices at $10.00@10.50 for best grades. There were 1,600 calves on sale here this morning.

Choice veals	$9.75@10.00
Light and thin	4.00@6.50

Sheep and lambs showed no important features the early days of the week, and on the close ruled steady with a light demand for lambs. Sheep ruled active. There was a moderate demand for yearlings and the best grades sold steady. With 60 carloads of sheep and lambs on sale today the market was stronger.

Choice lambs	$7.90@8.00
Poorer grades	6.00@6.50
Yearlings	6.75@7.25
Wethers	5.75@6.00
Ewes	5.00@5.25
Sheep	5.25@5.50

The hog trade fluctuated in price during the week, but on the close, with moderate receipts and a fair demand, ruled steady at a little higher range than the first days. Today's hog receipts were 90 cars, and the market was steady on all best grades at a flat price of $8.90.

Heavies	$8.90@
Mixed and Medium	8.90@
Yorkers	8.90@
Light Yorkers	8.90@
Pigs	8.90@9.00
Roughs	7.65@7.85
Stags	6.00@7.25

BALTIMORE LIVE STOCK

Baltimore, Md., May 19, 1913.

Beef receipts for the week were 1,685 head. The market is steady.

Steers	$6.75@8.15
Heifers	5.75@7.75
Cows	3.25@6.00
Bulls	6.35@7.00
Fresh cows	27.50@77.50

Sheep and lamb receipts were 3,118 head. Under a fair supply the market is steady on lambs and lower on sheep.

Sheep	$2.50@5.75
Lambs	6.00@9.15
Spring lambs	7.50@10.00

There were 11,333 hogs on sale during the week. Under a liberal supply the market is lower.

Light western	$9.00@9.15
Heavy to medium	8.90@9.00
Near by	9.00@9.05
Pigs	8.80@8.90
Roughs	7.00@8.25

Calf receipts for the week were 520 head. Most of the receipts were of unattractive stock, and under a light supply the market is higher at $6.00@10.25.

NEW YORK LIVE STOCK

New York City, May 19, 1913.

Cattle receipts for the week were 2,806 head. The market is irregular.

Steers	$6.00@8.55
Bulls	6.00@7.75
Cows	3.50@6.60

Dressed beef weak. Native sides, 11@13c.

Calf receipts were 7,147 head. The market is 25 cents higher.

Choice veals	$8.00@10.75
Good veals	6.00@7.50
Culls	6.00@7.50

Dressed calves are steady

City-dressed veals	13½@16c
Country-dressed veals	11@13½c

Sheep and lamb receipts were 11,270 head. Sheep are strong and lambs steady.

Clipped sheep	$4.00@6.10
Unshorn lambs	7.25@9.25
Clipped lambs	6.50@8.00
Spring lambs	8.00@10.50

Hog receipts were 10,212 head. The market is weak at $8.80@9.00.

ELGIN BUTTER QUOTATION

Elgin, Ill., May 19, 1913.

The quotation committee of the Elgin Board of Trade this afternoon declared butter firm at 28½c a pound.

NEW YORK MILK QUOTATION

The wholesale milk price is $1.51 per 40 quart can for class C; class B, $1.61.

PITTSBURGH HAY AND GRAIN

Pittsburgh, Pa., May 19, 1913.

The demand for the better grades of hay is increasing rapidly and receipts are light. Poor grades are not wanted. Rye straw is in good demand, but oats and wheat are dull and without interest. No. 1 timothy, $16.00@16.50; No. 2 do., $13.50@14.50; No. 3 do., $10.00@12.00; No. 1 light mixed, $13.00@13.50; No. 1 clover mixed, $12.50@13.00; No. 2 do., $9.00@10.00. No. 1 clover, $12.00@12.50; No. 2 do., $7.00@10.00. No. 3 prairie, $10.50@11.00; No. 4 do., $8.00@9.00; No. 1 oat straw, $8.75@9.00; No. 2 do., $8.50@8.75. No. 1 wheat, $8.75@9.00; No. 2 do., $8.50@8.75; No. 1 rye, $11.00@11.50; No. 2 do., $9.25@9.50. Ear corn arrivals are in slow demand. No. 2 yellow, 66@67c; No. 2 high mixed, 65@66c. Shelled corn receipts are in greater demand. No. 3 yellow natural, 62@62½c; sample, 59½@60½c. Oats are in fair demand and the market is stronger. No. 2 white, 42½@42¾c; standard 41¼@41¾c; No. 3 do., 39¼@40¼c; No. 4 do., 37¼@38¼c. The demand for middlings is very slow. Market dull. No. 2 white mids., $23.75@24.25; No. 1 brown mids., $21.25@21.75. Winter wheat bran, coarse, $22.00@22.50; do., medium, mids., $21.00@21.50.

TOBACCO MARKET

At the regular monthly meeting of the Lancaster County Tobacco Growers' Association it was reported that plants are not doing well, and in many sections, including Quarryville, Marietta, Rohrerstown, Warrick and Gordonville, the damage arising from cold weather, snails, etc., is considerable. The latter have been controlled by the use of arsenate of lead. In other localities plants are doing well and small areas have been transplanted. In places about 10 percent of the acreage will be Havana.

At the same meeting it was decided to make an effort to interest all of the tobacco growers if the county, if possible, and with that view a grand outing will be held August 9th, at which time matters will be fully explained. The main object is to establish a uniform and controllable system of marketing. The outing will be extensively advertised, and doubtless the attractions will be many. At present only 200 of the 10,000 growers of the county belong to the organization.

During the week but few sales were made these being at about $6 per cwt. It is estimated that between 5 and 10 percent of the crop remains in growers' hands. In a few localities, however, the majority of the crop remains unsold. Buyers are inclined to blame the farmer who is now compelled to accept a low price, claiming that he refused to sell when price was better. An eastern journal volunteers the information that ''growers are tired of holding their tobacco at a fixed boom price and are now on the run to dispose of it at any price then can get.'' Note especially ''fixed boom price.''

In New York the plant beds are said to be better than usual, and a 15 percent increase in acreage is predicted. The same conditions are reported from Connecticut. In Wisconsin the prospect is very poor, owing to cool weather and drouth. In Ohio too, a sharp drouth and cold, frosty weather followed the recent disastrous floods. At present, however, warm rains are making the situation more favorable, but with such variable conditions it is not at all likely that the crop there will be an average one.—H. I. Tweed, May 19, 1913.

LONGEVITY OF SEED CORN

Can you give an explanation of the length of germ life on the cob? J. H. P., Mechanicsville, Pa.—Experiment station tests indicate that there is little difference in the longevity of seed corn on the ear and shelled if both forms are kept under the same conditions. Bailey gives the average length of time that corn will retain its germinating power as two years, with four years as the extreme. However, Haberlandt's figures on longevity show that in a test conducted some years ago, seed five years old gave a percent of germination of 76. Many conditions, such as perfection of maturity, dryness, temperature and ventilation of storage, influence the longevity of seeds.

NET WEIGHT LAW

The committee appointed to draw up regulations for the enforcement of the new Federal net weight law will hold a public hearing in New York during the week of June 9 to receive recommendations, suggestions and protests of manufacturers, dealers and others interested. The net weight law, which is to go into effect in September, 1914, requires that the quantity of the contents of food packages be plainly marked on the outside of each package in terms of weight, measure or numerical count.

Household

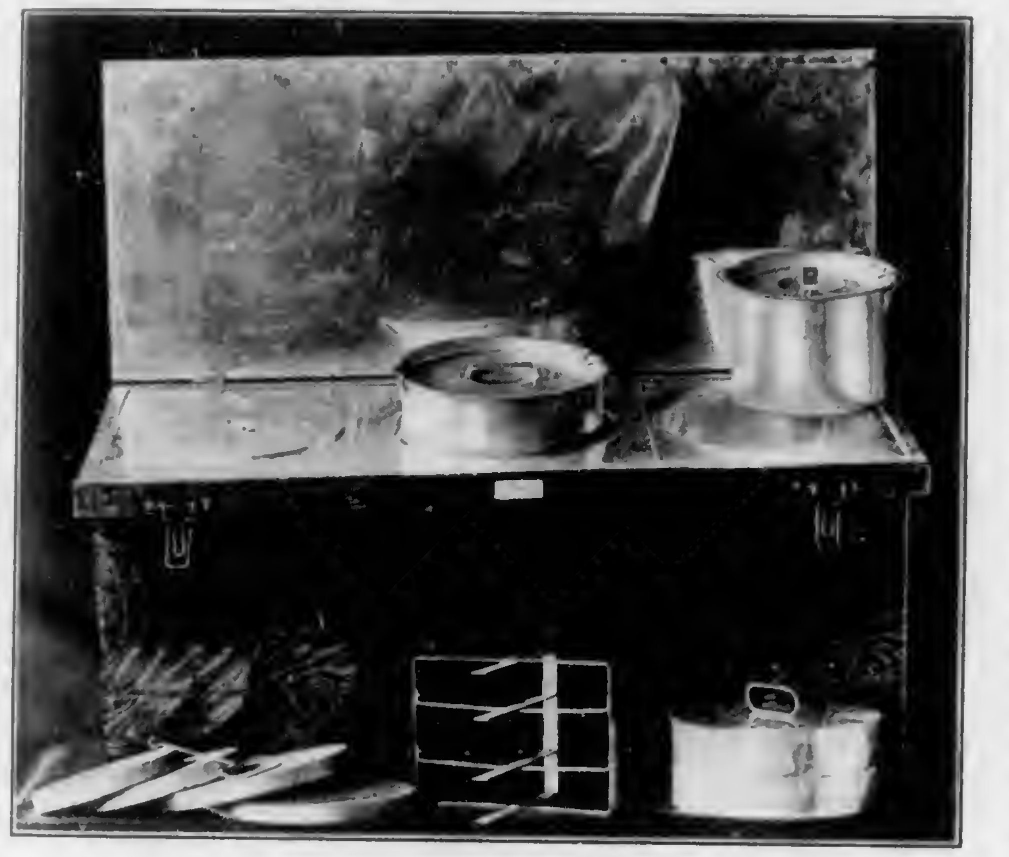
FIRELESS COOKER RECIPES

By Marion Harris Neil

The following recipes are intended for use by fireless cooker operators. Following these recipes will soon suggest methods of complete mastery of the cookers.

Cream of Celery Soup.—Cut into small pieces 3 celery heads, cover with water and bring slowly to a boil. Boil 10 minutes and then place in the fireless cooker for 2 hours. Blend 2 tablespoonfuls of butter and 4 tablespoonfuls of flour in a saucepan over the fire, add 1½ cups of milk and cook for 5 minutes. To this add the drained celery water. Season with salt and pepper.

Escalloped Salmon.—Take one can of salmon; place in a baking dish one layer of the salmon. Sprinkle over one tablespoonful of flour, dot with pieces of butter, season with salt and pepper, add another layer of fish and so on until the dish is full; cover with breadcrumbs and heat and place in the fireless cooker for one hour. Use two radiators.



A THREE-NEST FIRELESS COOKER AND EQUIPMENT.

Roast Chicken.—The time necessary for roasting a chicken depends upon the age of the bird. One hour and a half is sufficiently long for a young chicken, but an older one should be roasted 2 hours, and a very tough fowl for 3 hours. Prepare the chicken in the usual method for the oven. It will not be necessary to heat the chicken to brown it before it has been placed in the fireless. If both radiators are made very hot, the chicken when roasted will turn out nicely browned. The chicken, therefore, can be placed cold in the vessel and put at once in the cooker for roasting. It is not necessary to open the cooker for basting, as the hot steam prevents burning.

Pork Tenderloin.—Choose thick tenderloin, split them, but not quite thru. Make a dressing of breadcrumbs, salt, pepper and melted butter. Stuff tenderloin and bind together. Have one tablespoonful of melted butter in cooker kettle, add the tenderloin and bake in roasting compartment for 1½ to 2 hours.

Butter Biscuits.—Four level cupfuls of flour, 1½ cupfuls of sweet milk, 4 level teaspoonfuls of cream of tartar, 2 level teaspoonfuls baking soda, and butter twice the size of an egg. Sift the soda and cream of tartar into the flour, then rub the butter in with the tips of the fingers, add the milk last. Bake with two radiators very hot.

Brown Bread.—One quart of buttermilk or sour milk, 1 tablespoonful of baking soda, 1 tablespoonful of salt, 1 tablespoonful of melted butter or drippings, 1 cupful of New Orleans molasses. Stir all together thoroly, and add 4 cupfuls of coarsest graham flour and 2 cupfuls of yellow cornmeal. Bake with two hot radiators for 3 hours. This is much nicer if raisins or currants are added and 1 teaspoonful of powdered cinnamon ¾ of a teaspoonful of allspice, ½ a teaspoonful of grated nutmeg, and 1 teaspoonful of ginger.

Cottage Pudding.—One cupful of sugar, quarter cupful of butter and 1 egg, well beaten together. Add 1 cupful of milk and 2 teaspoonfuls of baking powder, well sifted in 2 cupfuls of flour. Bake in shallow buttered pans between 2 moderately hot radiators, for 20 minutes. Serve with sweet sauce.

Lemon Pie.—Take the strained juice and grated rind of 1 lemon, being careful not to grate thru the outer rind; 1 tablespoonful of cornstarch, 1 cupful of sugar, 1 egg, scant half cupful of butter, and 1 cupful of boiling water. Put the water into a saucepan and add the cornstarch, stirred smooth with a little cold water; when it boils after stirring, remove from the stove and add the butter and sugar, which has been previously well stirred together; when cool add eggs and lemon. Pour into a crust in pie plate and remove to fireless cooker, using both radiators. This will bake in 20 minutes. After baking, cover with a meringue and place in fireless, again using both radiators.

Boiled Onions.—Cover onions with boiling water. Salt and boil for 3 minutes. Cook in fireless cooker for 2 hours or longer, using one hot radiator. Drain, cover with hot milk, season to taste with salt and pepper and thicken with flour.

Oatmeal.—One cupful of oatmeal, 3 cupfuls of water, 1 teaspoonful of salt. Stir oatmeal into the boiling water, adding the salt, and allow to boil for 5 minutes; place in the cooker over night.

Spinach.—Clean and wash spinach, carefully removing roots, place in kettle and add half as much boiling water as spinach, salt and boil slowly for 10 minutes. Place in cooker for 3 hours, drain, add butter, salt and pepper. Serve with vinegar and hard cooked eggs cut in slices.

Boiled Rice.—One cupful rice, 2 teaspoonfuls of salt, 5 cupfuls of water. Clean and wash rice thoroly, then stir it into the boiling water, adding the salt, and allow to boil for 5 minutes. Place kettle in cooker and allow to remain for 3 hours. It may be left over night without overcooking.

CLEAN-UP DAY ON THE FARM

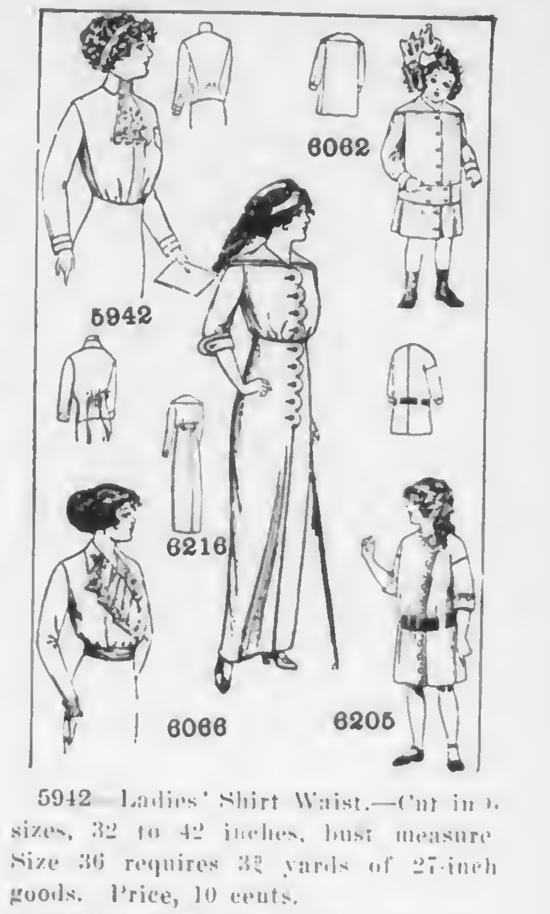
All the cities and towns have their clean-up days, when brooms and paint brushes clean and brighten the premises. In spring, farmers are so busy that a day off seems almost impossible. The women are busy in the house, but we usually arrange to find time to clean up around the yards. Our house is surrounded by large yards, with gentle slopes, and so the rains and winds do much to help their appearance, but they must be gone over with rake and broom. Flowers and vines must be planted, worked, or trained, and the early blooming shrubbery we prune just after blooming. Some may not approve of this method, but we find it very satisfactory.

As we raise chickens in the old-fashioned way, with coops, allowing free range, we whitewash each coop before using it, not only improving its appearance, but making it more sanitary. My husband always has the poultry houses cleaned each month, so I do not have much difficulty in keeping them clean. By the last of June we find a little slack spell, so at that time the men clean around the stables, sheds and fence rows, whitewash all buildings necessary, and do any other cleaning up necessary. As all farm implements are kept under cover, being put away immediately after being used, this is not such a stupendous task.

How many farms we see need clean-up days! If you own your property, it adds to its value to have buildings and fences in good repair. If you are a tenant, it adds to your reputation as a good farmer,and certainly gives you a more prosperous appearance than delapidated machinery scattered about the yard, broken-down fences, and loose boards on the shed or stable. Money invested in paint, brushes, brooms and rakes is well spent, provided the purchases are used. Let us get the clean-up habit.—The Country Housekeeper.

PENNSYLVANIA FARMER PATTERNS

Be sure to give the figures and letters of each pattern exactly as printed at the beginning of each description. We will not be responsible for correct filling of your orders unless you do so. Also give bust measure when ordering waist patterns, waist measure for skirt and age for children's patterns. Address Pennsylvania Farmer, 214-18 So. 12th St., Philadelphia, Pa.



5942—Ladies' Shirt Waist.—Cut in 6 sizes, 32 to 42 inches, bust measure. Size 36 requires 3⅞ yards of 27-inch goods. Price, 10 cents.

6216—Ladies' Dress.—Five sizes, 34 to 42 inches, bust measure. Size 36 requires 5¼ yards of 36-inch material. Price, 10 cents.

6062—Children's Dress.—Four sizes, 2 to 8 years. Age 8 requires 2¼ yards of 36-inch material, ⅜ yard of 27-inch contrasting material. Price, 10 cents.

6066—Ladies' Blouse, with Removable Chemisette.—Five sizes, 34 to 42 inches, bust measure. Size 36 requires 2½ yards of 36-inch material and one yard of embroidered ruffling. Price, 10 cents.

6205—Girls' Dress.—Sizes 6, 8, 10 and 12 years. Age 8 requires 3 yards of 36-inch material. Price, 10 cents.

Half the Rubbing taken out of Scrubbing
Old Dutch Cleanser
Old Dutch Cleanser
Many Uses and Full Directions On Large Sifter-Can 10¢

Veterinary

(Conducted by W. C. Fair, V. S.)

(Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also name and address of writer. Initials only will be published. When reply by mail is requested, it becomes private practice, and a fee of $1 must accompany the letter. This is one of the most valuable columns of the paper and we invite readers to make use of it. Clippings from this column, when properly preserved and classified, would make one of the most valuable medical symposiums a farmer-stockman could obtain.)

Bony Enlargement on Face.—I have a 3-year-old-filly which has hard bunch on side of her nose. I first noticed it some three months ago. This bunch seems to extend into nostril, partially closing air passage. The bunch is painless. L. M., Townville, Pa.—It is possible that the enlargement is a cyst filled with a curd-like mass, which should be allowed to escape. In my practice I usually open into sack from outside, then inject a 4-percent solution of carbolic acid into cavity, twice a day. If the bunch is bony, apply 1 part iodine and 10 parts lard, once a day.

Mare Out of Condition.—Have a mare, 18 years old, due to foal soon which has been out of health and running down for the past 12 months. About April 1st, a soft bunch appeared on under part of belly which seems to leave when mare is exercised. A little swelling remains on lower part of one side of abdomen, but is not painful. This mare does not do any hard work and has a fairly good appetite. J. E. K., Grand Valley, Pa.—Apply 1 part tincture iodine and 9 parts soap liniment to swelling under abdomen daily. Give her 1 oz. ground gentian, a tablespoonful of cooking soda and a tablespoonful of ginger and a tablespoonful powdered charcoal at a dose in feed, 2 or 3 times a day.

Sore Shoulders.—Since commencing to work my 3-year-old colts nearly all of them have sore shoulders, and I would like to know of a remedy that is not too expensive. B. J. T., Harmony, Pa.—Dissolve ¼ lb. sugar lead, ¼ lb. sulfate of zinc, 2 oz. of carbolic acid and 2 oz. of tannic acid in a gallon of water and apply to sore shoulders, 3 times a day. Are you sure that their collars fit properly? Remember, if the collar is not nearly the shape of their shoulder and fits badly, it will be difficult to heal them.

COUNTY NOTES

Erie Co., Pa. (N. W.), May 12.—Cool with frost nights. Young cattle scarce but looking well; in the pastures. Pork, dressed, 12c; eggs, 16@18c. Oats are nearly all up but are looking yellow because of the cold. The fruit crop in the valleys is probably damaged by freezing. About half of the potatoes are planted. The farmers are now fitting corn lands.—L. Howard Morton.

Carbon Co., Pa. (E. C.), May 12.—Extremely warm first week in May, followed by freezing temperature. Grain and grass looking fine, but a good rain is needed for mature growth. A local dairyman recently purchased a Holstein sire of a York State stock farm for $400, which is the record price for this county. All crops are planted except corn. Some corn planted May 2.—Brice Brinckman.

Perry Co., Pa. (C.), May 12.—Cool and dry. Stock looks well. Crops are about all in the ground. Wheat looks well but not growing on account of dry weather. Wheat, $1; corn, 65c; rye, 65c; oats, 35c; butter fat, 30c; eggs, 18c; potatoes, 35c. Work is well on; some corn to plant. Help is scarce and high.—S. B. Swartz.

Warren Co., N. J. (N. W.), May 11.—Weather fair, first part warm; cold later part and froze ice last night. Live stock out to pasture. Corn, ears, 90c per cwt.; eggs, 18c doz. Oats sowed and potatoes planted. Some corn planted. Grass and grain look good.—V. R Loller.

Crawford Co., Pa. (N. W.), May 12.—Weather cold and dry; wind in northwest. Froze ice for three nights. Wheat looks fair. A few fields have been plowed up. Young stock in pasture Butter, 30c, eggs, 16c; veals, 7c; hogs, 8c; hay, $19; potatoes, 45@50c. Work well along. Oats all sown. Some potatoes and corn planted. Farm help scarce.—J. F. Seavy.

Huntingdon Co., Pa. (C.), May 10.—Fair and cool; some light frosts. Live stock in good condition; scarce and high. Oats sowed and corn and potatoes mostly planted. Winter wheat promises to be a bumper crop. Pasture excellent. Wheat selling at 90c; oats, 50c; corn, 70c; potatoes, 65c; beef cattle (dressed), 12@13½c; butter, 30c; eggs, 17c. Fruit injured more or less by frost. Farm work moving off smoothly. Farm labor scarce.—Clair L. Harnish.

Montgomery Co., N. Y. (E. C.), May 9.—Fair and dry. Several very hot days. Hay active, $14@15; first cheese sale, 12¾c. Butter lower. Eggs firm, 18c. Spring pigs in demand at $5. Much road work being done. Oats have been sowed. Corn and potatoes being planted. Grass looking good. Pastures two weeks earlier than usual. Granges active.—John L. England.

CROP REPORT—MAY

The Crop Reporting Board of the Department of Agriculture estimates crop conditions on May 1 as follows: Area of winter wheat to be harvested was about 30,938,000 acres, or 4.5 percent (1,449,000 acres) less than the area planted last autumn, but 16.4 percent (4,367,000 acres) more than the area harvested last year, viz 26,571,000 acres. The average condition of winter wheat on May 1 was 91.9, compared with 91.6 on April 1; 79.7 on May 1, 1912, and 85.6, the average for the past 10 years on May 1.

A condition of 91.9 percent on May 1 is indicative of a yield per acre of approximately 16.6 bushels, assuming average variations to prevail thereafter. On the estimated area to be harvested, 16.6 bu. per acre would produce 513,571,000 bu., or 28.4 percent more than in 1912, 19.3 percent more than in 1911, and 18.3 percent more than in 1910.

The average condition of rye on May 1 was 91.0, compared with 89.3 on April 1, 87.5 on May 1, 1912, and 89.6, the average for the past 10 years on May 1.

The average condition of meadow (hay) lands on May 1 was 88.5, compared with 85.7 on May 1, 1912, and a 10-year average on May 1 of 88.5. Stocks of hay on farms May 1 are estimated as 10,828,000 tons (14.9 percent of crop), against 4,744,000 tons (8.6 percent) on May 1, 1912, and 8,673,000 tons (12.6 percent) on May 1, 1911. The average condition of pastures was 87.1, compared with 81.7 on May 1, 1912, and a 10-year average on May 1 of 86.1. Of spring plowing 67.2 percent was completed up to May 1, compared with 52.8 percent on May 1, 1912, and a 10-year average on May 1, of 65.7. Of spring planting 57.0 percent was completed up to May 1, compared with 48.9 percent on May 1, 1912, and a 7-year average on May 1 of 54.3.—Victor H. Olmstead, Chief of Bureau, Chairman.

NOTES

Guernsey Cattle Interests.—The fiscal year of work of the American Guernsey Cattle Club closed May 1, closing the most prosperous year known to the club. The gain in number of registrations over last year was 588 bulls, 612 cows and 1,210 transfers. The general business of the Herd Register amounted to over $62,000, a gain of nearly $7,000 during the year. The Guernsey is going into new territory, and there is a strong indication of the public interest taken in the merits of the breed.

Growth in Cement Industry.—A recent bulletin from the United States Geological Survey shows that the American Portland cement business has grown from 7,000 long tons production in 1880 to 12,986,152 tons in 1910. Compared with the iron industries, the percentage of cement to pig iron in 1910 was 48.7, as compared with 24.3 in 1905; 10.3 in 1900; 1.7 in 1895, and 0.1 percent in 1880.

Exhibition of Road Models.—Arrangements are to be made by the United States Department of Agriculture to place on exhibition at the Panama-Pacific Exposition in 1915 the greatest collection of road models ever displayed in any part of the world. They will furnish exact duplicates of the old Roman roads, French roads, and all of the various types of modern roads, together with miniature models of road machinery operated by electricity.

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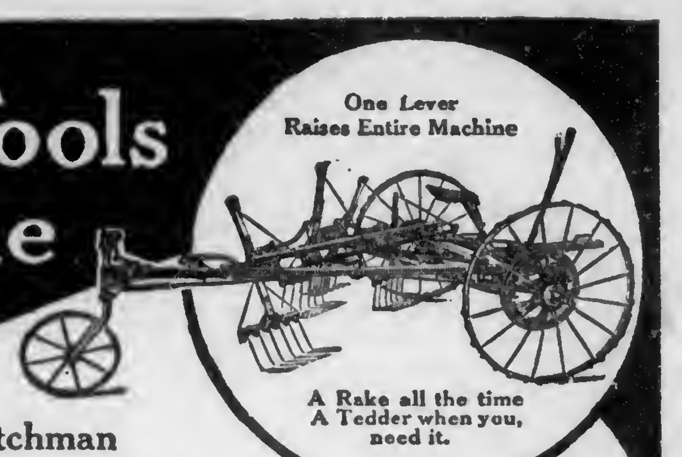
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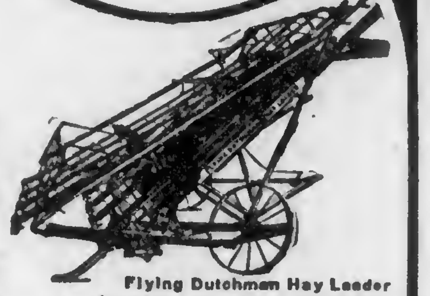

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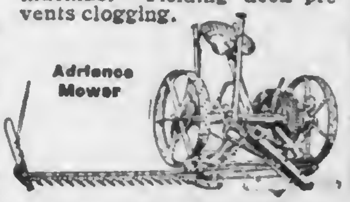

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AGRICULTURE
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ESTABLISHED 1880
PUBLISHED WEEKLY
VOL. 33.—No. 23. PHILADELPHIA, PA., SATURDAY, JUNE 7, 1913. 50 CENTS A YEAR.

Headle Dr. T J c813
Rutgers College

Cultivating the Waste Places.

By J. GORDON DORRANCE,
Oneida Co., New York.

Many a landowner has on his particular piece of property a small tract of land which is cut off from the rest of his farm by an intervening railroad or stream, some corner rank with weeds and brush, a bare, eroded slope, or possibly a bit of sandy, worn-out land, any and all of which will scarcely merit the attention and care of the owner if used for gardening or farming.

On such lands the planting and raising of forest trees enables the owner to utilize to good advantage ground unsuitable for all else. Better farming, in making your land twice as productive as heretofore, is far preferable to doubling its area in idle fields. And from an economic standpoint it is important that all unused and sterile lands be again put into the producing class, that they may be a credit instead of a disgrace to the owner and to a country which should always stand for intensive cultivation.

In the state of New York, and this applies equally well to several of her neighbors, many a farm has, unfortunately, within its boundaries an acre or more of dry, sandy soil, which often seems incapable of producing anything of value. Frequently it happens that this piece of waste land is supporting a cover of brush and weeds, and the land, apparently worthless, is nevertheless quite fertile enough to produce something worth while. Here, too, the "abandoned farm" is found, its buildings deserted, the soil in many cases become arid, shifting heaps of sand blown about by the wind. Here the question is not alone one of reclaiming the waste lands themselves, but still more important, of preventing the encroachment of this loose soil on valuable properties adjoining.

At first glance, it seems a difficult task to find anything that will restore the soil's fertility, or even grow at all, in so poor an environment as this. There are, however, a number of valuable trees which will not only grow, but actually thrive, in such a location, and among the best available species are the Red and Scotch Pines, even the famous White, all valued for their natural beauty and high quality of timber, and all trees which will do well in situations where the soil is impoverished and exhausted and its moisture content poor.

On worn-out farm lands, and other non-agricultural soils, preparatory treatment of the planting site, as well as subsequent cultivation of the trees themselves, is seldom necessary. Unless, of course, a dense growth of weeds and brush covers the soil surface, in which event they may be removed without a great deal of time and expense, substantially aiding the young stock for the first few years. It is also important at the very start to carefully exclude all cattle and sheep from the forest plantation, as their browsing and sharp hoofs are always destructive to the young trees.

Forest seedlings of all kinds can now be easily obtained at very low prices. In fact, a number of the states are glad to furnish trees at cost. Generally speaking, 2 or 3-year-old transplantings of any of the pines already mentioned should be planted in April or May to enjoy the spring rains, altho many farmers have successfully tried fall planting. The trees themselves should be handled with the least possible exposure of the young and sensitive roots, for but a few minutes in a hot sun is sufficient to wither and kill them. A wet or cloudy day is best for planting, and on unpacking or transplanting the young stock should be put in a basket or pail containing a thin mixture of earth and water. Thus treated, they are kept in good condition, and in this way may be carried about during the planting time without injury to the roots.

The transplants are usually placed in either ploughed furrows or in individual holes, made with a dibble or spade. For planting of this sort, intervals of 6 feet between the trees and rows are advised, making a total of 1,210 trees per acre. Should there be no rainfall within a fortnight, water should be applied to the roots of the young trees. Very little care, however, is necessary, and in a surprisingly short time ground once desolate and bare is hardly recognizable under its thriving canopy of shade.

The writer once saw in Germany a plantation of Scotch Pine made 40 years ago on a dry, sandy field. Moss and grass now cover the ground, and the moisture content and fertility are completely restored. The trees themselves have attained an average hight of 60 feet, and stand 40 cords to the acre, showing a large return for the small original investment.

But the "waste places" are not confined to sandy, weed-grown hills and fields. Where a house adjoins some lake or stream, or there is on the farm land too wet for cultivation, a bit of judicious tree-planting would bring excellent results, and add materially to the attractions and value of the place. In the case of low-lying lands often moist and swampy thruout the year, it is advisable when possible to dispose of some at least of the water covering them before beginning their improvement thru afforesting. However, this is not absolutely necessary, for instead "ridge-planting" may be resorted to. In ridge-planting, parallel ditches are dug 8 feet apart, the soil thus obtained forming ridges in the center, where planting is easy in the fall, when there is usually the least water.

FARMERS' INSTITUTE SPEAKERS AND COUNTY CHAIRMEN AT RECENT MEETING IN WASHINGTON, PA.

Seedlings of Birch and Alder, two years old, will do well in mixture here, and should be planted 3 or 4 feet apart in each direction. The edges and slightly more elevated portions of the swamps may be planted in Ash, and in such a habitat Spruce, Cedar and Tamarack also lend themselves readily to cultivation. In Germany, Willow poles of 3-inch size are extensively planted on low lands, and may be seen effectually holding down the shifting sands along the famous Rhine.

The Profits of Forestry.—But naturally this whole subject of reclaiming the waste places thru forestry resolves itself into the one question, "Will it pay?" Let us see. In New York, planted forests of White Pine, 45 years old, are worth $200 to $400 an acre, showing a latent return in money of $6 or $7 per acre per annum. Prior to planting, these very lands, now worth for their timber alone so large a figure, were scarcely fit even for grazing. Plantations of Red Cedar, 25 years old, are worth $200 an acre. European Larch of the same age, for telephone poles and fence posts, easily $225. Certainly such lands as these would have been far less profitable as pasturage, or when rented to billboard advertisers.

Some years ago, up in Vermont, a number of old abandoned farms which were worth, at a very high valuation, $10 an acre, were again made productive by planting in Norway Spruce at $5 an acre, making altogether, we may say, an initial outlay of $15. Allowing on the cost price an interest charge of 6 percent for 32 years, the Norway Spruce when cut at the expiration of that time paid a net profit of $201.70 per acre. What is possible in Vermont is practicable elsewhere, and farm land which can not be profitably handled in other ways should be afforested and reclaimed.

Weed-grown fields and unsightly spots are supplanted by a living, growing canopy of green, and the comfort and attractiveness of the home enhanced thru the cultivation of the most useful plant that grows. The productiveness and well-being of every community will be increased, and the individual farmer will himself find that forestry pays, and pays well.

Cowpeas.

By A. E. GRANTHAM, Agronomist Delaware Experiment Station

Cowpeas should be grown more extensively in the Eastern States. The ease with which the crop may be grown, together with its high feeding quality and its value for soil improvement should encourage the average farmer to introduce cowpeas into his crop rotation. The feeding value of cowpeas is fully equal to that of the best red clover hay and only a little less than alfalfa. In palatability cowpea hay surpasses red clover hay, as animals will readily eat the forage even when improperly cured or damaged. For a brief period in the latter part of the summer or early fall cowpeas make an excellent pasture, especially valuable as a supplementary feed for growing stock or dairy animals. The hog is particularly fond of the maturing cowpea plant, and decided gains follow the use of the crop as pasture in pork production. Some stockmen claim that hogs will gain almost as rapidly on cowpea forage as on corn. Of course, the best results are secured when the one crop is used to supplement the other.

The rapid and extensive growth of the cowpea is an important item in its favor. As much forage can be produced from cowpeas in 90 days as red clover will produce in 15 months. This applies to sections where medium maturing varieties of peas may be matured. North of the latitude of Philadelphia the earlier maturing sorts are best adapted.

In the matter of soil improvement the quick maturing habit of the cowpea renders it admirably adapted for sowing as a catch crop between the regular crops of the rotation. South of Pennsylvania, cowpeas may follow wheat and produce a crop for hay or pasture before time for fall seeding North of this latitude the practice will be successful only in favorable seasons or where an early maturing variety is used.

When cowpeas are used as a main crop during the season they follow corn to good advantage and in turn are followed by wheat. On thin lands the yield of wheat after cowpeas is often increased from 50 to 100 percent. Cowpeas should always be followed by wheat or other fall-sown crop in order that the nitrogen accumulated in the soil by growing peas may not be lost during the winter by leaching. Another method of utilizing cowpeas for soil improvement is to sow them in the corn at the last cultivation. The growth the peas make will depend on the rainfall during the summer, as the corn will require much of the soil moisture. However, in most cases the peas will make sufficient growth to make an appreciable difference in the yield of grain the following year.

The effect of growing cowpeas on a clay or a clay loam soil is to make the soil more friable and easily worked. This is especially noticeable in breaking the land the following spring. The growing of cowpeas has the effect of putting the soil in such a condition that red clover take more readily and produces a better stand. Some growers claim the best way to get a good growth of clover and timothy is to precede the wheat with cowpeas. Early maturing crops, such as early potatoes and other vegetables, as well as old strawberry land, may be sown to cowpeas to good advantage.

Cowpeas will grow on any type of soil, providing it is not too wet. Like other legumes, cowpeas grow indifferently on wet land. Sandy or clay loams are perhaps best suited to cowpea culture, altho clays produce a good crop under proper management.

The seed bed for cowpeas should receive as thoro cultivation as that for corn. To insure prompt and uniform germination it is necessary to provide a warm, moist, mellow soil. If planted when the ground is cold and wet the peas may rot. Under favorable conditions of moisture and temperature, cowpeas will appear three to four days after planting. Care should be taken to cover the peas lightly—not more than one and a half inches in clay soil. On loam or sandy loam soils deeper planting is not objectionable. If planted rather deep on clay soils, subsequent rains may cause the soil to run together in such a manner as to form a crust that is hard for the peas to penetrate In such a case it is well to run a weeder or other sharp-pointed implement over the ground just before the peas begin to emerge.

The method of planting peas will depend on whether they are to be cultivated or not. Where cultivation is intended, they may be drilled in rows varying in width from 24 to 42 inches This may be accomplished by the use of an ordinary grain drill by plugging up the holes in order to give the desired width. Drilling in this manner requires about one-third of a bushel per acre. Cultivation should commence as soon as the peas are large enough. A weeder is very satisfactory while the peas are small. Cultivate as for corn until the plants begin to vine. Shallow cultivation is best.

If the peas are not to be cultivated, sow with grain drill exactly as wheat or oats, using one and a half bushels per acre. Under the proper soil conditions the cowpeas will germinate quickly and grow so rapidly as to crowd out any weeds. This method of planting is generally followed where the peas are grown for a catch crop or for hay or where the acreage is so extensive as to make cultivation impracticable. Cultivated peas, however, generally make more seed, and is the more profitable method where the area of the crop is limited or where the peas are grown as a main crop for the summer.

When peas are sown in corn at the last cultivation, they may be put in with a one-horse wheat drill, three to five rows in each corn row. Or, they may be broadcasted by hand and cultivated in. This method is wasteful of seed and a good stand is more difficult to secure.

The time of planting cowpeas will depend on the purpose for which the crop is grown. If the peas are intended for a main crop on the land, they should be planted not earlier than two weeks after the usual corn planting time. When grown as a catch crop they should be sown as soon as the previous crop is removed.

Cowpeas should receive some fertilizers where the land does not produce a fair yield of corn. A mixture of 500 pounds of acid phosphate and 100 pounds of muriate of potash, applied at the rate of 200 to 300 pounds per acre, should give good results. Where cowpeas have not heretofore been grown, it is well to inoculate the seed before planting. This will insure the development of nodules, which indicate that the plant is securing its nitrogen from the air. These inoculating cultures may be obtained from the Department of Agriculture, Washington, D. C. Directions for use accompany the cultures, which are sent free of change.

Varieties of cowpeas vary considerably in their habit of growth and maturity, and the successful culture of the crop for a particular purpose depends somewhat on the proper selection of variety. In the lattitude of Philadelphia, the Whippoorwill is the best variety for all round conditions, and especially where the crop occupies the land thruout the summer. For catch crops or late sowing the New Era is best adapted. For seed production the New Era and Groite varieties are superior. In case the crop is sown for hog pasture or for plowing down as green manure, mixed cowpeas often serve the purpose equally well and are generally much lower in price. However, care should be taken to see that peas are sound and of good vitality.

ARE YOU SATISFIED WITH THE ROAD LAW?

An Expensive Luxury

I read an article in a recent issue of Pennsylvania Farmer on the state of road work under the new law; also the invitation for opinions of farmers. As now conducted, the state highway department is a very costly affair. The very high salaries drawn by this, as well as other departments, are out of all reason for the service rendered. Just how much money is absorbed by the officials and employes is a problem, but that only a small percent finds its way into the backwoods rural district is too evident to need mention.

My home town was influenced to purchase a stone crusher and engine, under the delusion that a state appropriation would be available. But instead of receiving $1,200, as expected, only $282 came our way. After spending the local tax and the state appropriation, the machinery was pushed aside, after a debt of $2,500 had been incurred for the outfit.

From the arguments advanced by interested persons and theorists, we could almost believe that, had we had good roads long ago, the farmer could have hauled themselves rich. Under the system of calculating used by these agitators, all the products of the country were somehow moved, and all that need be returned, in the way of coal, feed and other necessities, were successfully delivered every year, not on the best of roads, but moved all the same.

Now we have a force of surveyors and engineers traveling all over the state, measuring here and there, driving stakes that are soon lost sight of, and otherwise keeping busy. It is hard to decide what earthly benefit they are doing. Any person with a little intelligence and good eyesight can grade a road and be goverened by the flow of water that manifests the lowest points everywhere. Our road taxes are increasing out of all proportions to the benefits obtained, as where we have 5 miles of improved road we have 95 almost uncared for, because the money is so largely spent on the short distances where auto travel is heaviest. These autos, with grip chains on the wheels, and traveling at the rate of 30 or more miles per hour, are destroying good roads more rapirly than the owners are willing to help maintain.—W. H. Stout, Schuylkill Co., Pa.

Waste of Work

The great trouble with road work is the waste of labor from poor management. In a way, I think the cash road tax is better than the old work system. In working out this tax there are always a lot of shirkers who are slow to get out in the morning, take a long dinner hour and then want to quit on the tick of the watch in the evening. Some will even come out with an old wagon or set of harness, and spend the greater part of the day in repairs.

Under the new cash system the road gangs seem to work better, but they do not always work at the right season for best results. There is more of a desire to be a road commissioner under the new system, and each commissioner arranges the work to suit his own convenience.—Robt. K. McWhister, Mercer Co., Pa.

Taxes Higher

Under the old system of working out road tax, the tax in our township was only one-half as much as at present. For several years it only amounted to $3,500. Now it is over $8,000. I do not believe that the present road law is nearly right. Few men want to be a pathmaster for the glory, yet there are always plenty of applicants for the position. A better system would result if we had a salaried overseer at a salary of about $600 a year, and he to have charge of the road masters of the township.—H. B. Levan, Berks Co., Pa.

COMBATTING FLIES

It is well known that flies are responsible for much disease found in humans and animals, and vigorous efforts are being made to eradicate the fly or reduce its destructive work to a minimum. This can only be done by the co-operation of every individual, and farmers can do more in furthering this work than any other class of men. Farmers' Bulletin 532, of the Department of Agriculture, Washington, D. C., contains a discussion of the fly and means to combat it.

Handling the Stallion and Brood Mare

By Prof. W. H. TOMHAVE, Pennsylvania State College.

The value of the stallion does not depend upon the number of mares which are bred to him each season, but upon the number which he gets safe in foal. His popularity in a community depends upon the kind of colts he is able to sire, as the true worth of all breeding is best judged by the offspring. All stallions are not equally fertile or prepotent, and both of these qualities are somewhat influenced by the manner in which the stallion is handled. It also very often happens that stallions are not sure breeders because their owner is seemingly too careful in caring for them.

The breeding season is a severe tax upon the stallion, and for that reason he must be in the best of condition. He must be properly fed and exercised, not only during the breeding season, but some time before the season opens A stallion that is too fat from overfeeding and lack of exercise is generally a poor breeder. To keep a stallion shut up in a box-stall much of the time is a poor practice. When closely confined there is danger of his becoming unruly and more difficult to handle.

Photo by Dr Carl Gay.

A PENNSYLVANIA PRODUCT THAT SOLD FOR $400 TO GO OUT OF THE STATE.

That the manner of feeding the stallion has much to do with the number of foals produced is clearly indicated by the records kept by Mr. Carlson, of Norfolk, Neb. These records were secured in five states of the Central West, where various rations were fed.

No. of Stallions	Kind of Grain	No. of Mares Bred	No. of Foals	Percent of Foals
207	Corn	37,198	14,877	40
219	Corn and oats	34,907	15,902	46
234	Oats	38,214	20,711	54
83	Oats and bran	11,476	7,054	61
33	Grass and alfalfa	5,123	4,186	82

From the above table we learn that stallions fed largely on a ration of corn gave only 40 percent of foals, while those receiving oats and bran were able to get 61 percent of all mares in foal. This seems to indicate that the feeding of the stallion does influence his ability as a breeder. It is quite likely that most of the mares bred to the corn-fed stallion also received a ration made up largely of corn. Some corn can be fed to advantage, but must be supplemented by some feed rich in protein. The feed which the stallion receives should be of the very best. The hay fed should be bright, clean and free from dust and not mouldy. Clover and alfalfa hay are desirable if they can be fed in fine condition, and must then be sparingly fed. Clover and timothy hay is a desirable feed and is generally free from dust, and for that reason can be fed with a much greater degree of safety. As a grain feed for the stallion, oats seems to have no superior. It can be supplemented to advantage by a small amount of linseed oil meal, bran and some corn.

Another important point to be kept in mind in handling the stallion is the kind of exercise he receives. Some stallion owners make a practice of exercising their horse in a circle. Such practice should be discouraged, as it is often the cause of blemishes and injuries. It is much better to have the stallion do light work about the place for his daily exercise. When required to do some work each day, he does not require further exercise and is very much easier to handle. During the season of year when the horse is not standing for service he can take his regular place at farm work and thus materially reduce the cost of maintaining him.

Many young promising stallions are ruined before they ever reach maturity on account of too heavy service the first and second years as colts. A growthy, well-developed colt may be used to breed a dozen or fifteen mares Such services should not be closer than two a week, and better only one. As a three-year-old, he may be permitted to breed as high as 35 or 40, but have them scattered well thru the breeding season. In order to get a large number of mares safely bred at the first service it is advisable to never breed more than two mares the same day, and better yet only one. If two are bred in one day they should be at least eight to ten hours apart. One service is just as certain to insure a mare safely bred and much less of a tax upon the stallion.

The age at which to breed the young mare will depend upon the individual rather than upon any set rule. A drafty filly that is well developed when two years old may be bred. If she is not well developed and there is danger of retarding her growth if bred, it is better to pass her over until she is three years old. The advantage of breeding a mare when two years old is that she will have her first foal as a three-year-old, and can then be given a rest and not bred again until four years old. Most horses are not in the best of condition when coming four years old, because of changing from temporary to permanent teeth. If the mare is bred to have her first foal when coming four years it is a double tax upon her because of changing teeth.

After the mare has passed her fourth year she should be bred regularly each year, as it will help reduce the cost of feeding her and also mean the development of a colt for market each year. No stallion owner can afford to lead his horse about the community, and for that reason the mares should be taken to the stallion on the farm or place where he stands. The mare should not be overheated or driven too fast when taking her to the stallion or when returning after breeding. If the mare is warm and overheated she should be permitted to rest before being bred.

The gestation period of the mare is about 336 days, or 11 months. In order to have the mare foal regularly each year, she should be returned to the stallion 9 days after the colt is born, and if bred that time returned 21 days later to be sure that she is safely bred.

The feed of the mare is just as important as that of the stallion. Strong, healthy, vigorous colts can not be produced from mares that are not properly fed. Plenty of good clean wholesome nitrogenous feed, especially during the last half of the foetal period, will in a large measure determine the kind of colt that is born.

MILK FOR HOGS

Milk Is a Valuable Aid in Feeding

Sweet milk, skim-milk, sour skim-milk and buttermilk are of practically equal value when fed in the proportion of two and one-half to three pounds of milk to one pound of shelled corn, says the South Dakota Experiment Station, at Brookings, in its Bulletin 136. If you are interested in this subject it will pay you to write for a full account of the feeding tests on which this and other conclusions were based. A bushel of shelled corn when fed with water produced an average of 11.9 pounds of pork, but when fed with 153 pounds of milk the average weight of pork produced in the same length of time was 17.7 pounds. While this is no indication of the value of milk when fed alone, it seems to show that when fed with shelled corn, 153 pounds of skim-milk of little or no market value on the average farm, produced 5.8 pounds of pork worth about 40 cents at last year's prices.

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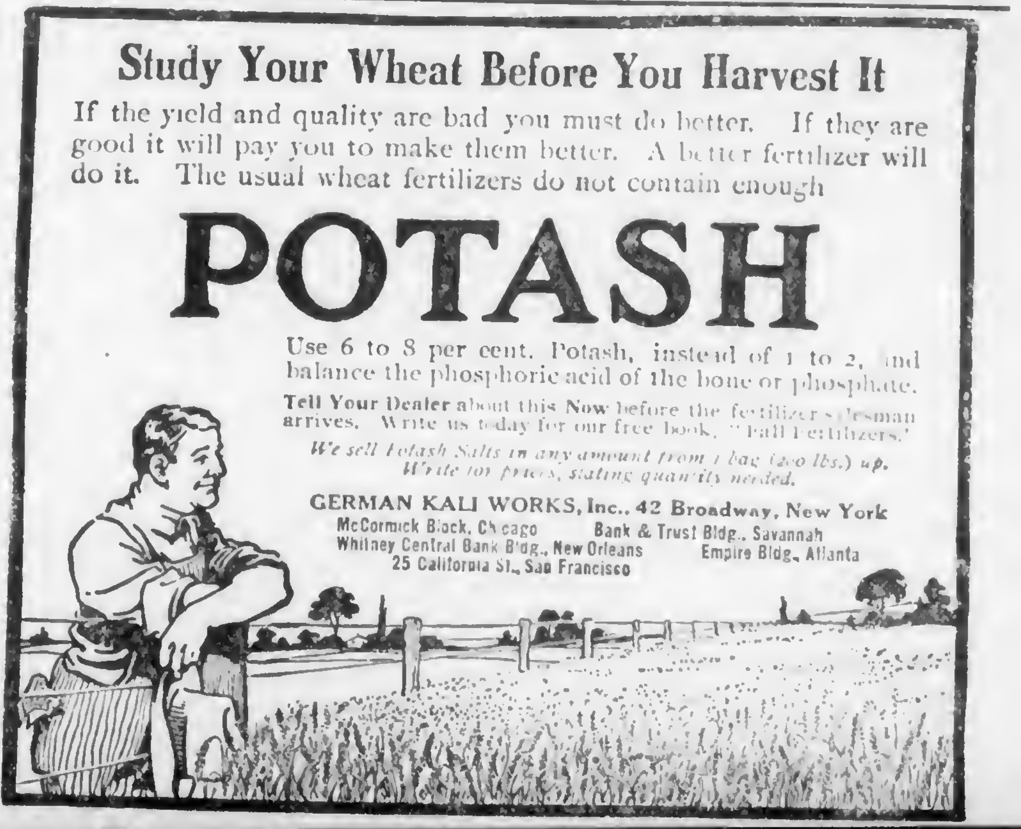

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Horticulture

VEGETABLE PACKING

The nondescript class of vegetables in the market causes the greatest loss to the producer. Into this class must go the vegetables irregular as to grade, quality and packing. From this class the buyer of first-class produce turns. There may be first-class produce among it, but it is not in a farm to warrant his attention. But it is to this class of produce that the buyer of bargains and cheap stuff looks. He knows that the good produce among it will clear him at his price which, considering the appearance of the lot, seems adequate. Is it any wonder that the commission merchant often jumps at a chance to clean out indifferent produce at "knock-off" prices before further deterioration marks it?

It is worth while to try by good grading to get one's produce into the good class and have it recognized as "fancy" where it will create a reputation both with the commission merchant and buyer. There are three ways to aid in the establishment of this: First, rigid grading of the produce as to size and soundness. Second, packing for appearance—not sham work, with good specimens on top and poor ones in the middle—but a neat, workman-like appearance as if one considered his produce worth while. Third, the package itself. It should be neat and clean and of honest, standard size calculated to best protect and display the contents.

With regard to grading, size is not as infallible a test with all vegetables as with fruits. Certain buyers consider oversize as great a defect as undersize. For instance, egg plant, some turnips, cucumbers, etc., do not improve in quality after a certain size is reached. Then, too, certain markets are more exacting as to this than others, according to the class of people to which they cater. This is why vegetables graded as to size make an individual appeal to a buyer who wants just that size and none other.

As to placing of produce in the packages, different markets and commission merchants have certain requirements, but the prime requisite is order. Its presence may not always be sufficiently appreciated as to price, but its absence depreciates. A buyer infers from careless placing that there may be careless sorting as well.

CUCUMBERS MUST BE UNIFORM IN SIZE.

In the case of return crates and packages, it is not possible to have them always new and fresh, but it is worth while to use the freshest looking packages for the better grades of goods, keeping the poorer for the culls.

Now as to packers. It pays to specialize. The farmer does this with regard to his asparagus packing, but often the other vegetables are packed by a general brotherhood plan, every helper having a hand in the final packing, according to his individual artistic perceptions and his sense of honor. The result is usually not standard. It is almost impossible to place the responsibility for carelessness. Let the careful, deft-handed man or men, who knows when a thing looks good, do the packing, while those less gifted gather the produce. There is usually a gain in time as well as efficiency where this is done.

These hints as to packing different vegetables may help some not familiar with the work:

Asparagus should be sorted as to culls and primes. All spears less than three-quarters of an inch thru are culls, as are all marred or blemished spears. In bunching the primes, the large, fine spears may be placed at the outside of the bunch without deception, as the buyer can judge of the quality thruout by simply looking at the base. The spears should be laid straight in the buncher with the heads even. When complete the base of the bunch must be even and clean cut. All asparagus should be washed before bunching and again before putting it into crates, which should be slatted. Those containing from 18 to 24 bunches are preferable to larger crates.

ALL PACKAGES MUST BE NEAT AND CLEAN.

Turnips heat readily and should never be shipped in tight barrels. They are bunched when small—seven in a bunch—and shipped loose in the barrel when larger. Egg plants are shipped in half barrel baskets, if the price is good, and in barrels if the market is low. Melons (musk) are shipped in crates or in baskets holding a half barrel. Local markets often take them in peach baskets.

Corn heats readily, so should be quickly shipped. Bags or barrels are used for distant shipment, and it is sold by the hundred cars. Tomatoes should be graded in two or three grades, according to the run of the fruit, as large, medium and culls. The marketable culls are sound tomatoes either too small or imperfect to be classed with the other grades. Tomatoes are improved in appearance by careful laying in the package, along the sides and top, and they carry better than where loosely and carelessly put in. Cucumbers are prime when of good shape and medium size. Crates, boxes or peach baskets are used for the salad size, and baskets for the pickles.—M. Roberts Conover, Monmouth Co., N. J.

ESSENTIALS IN CO-OPERATION

A man who is closely allied with the co-operative methods of selling western apples recently said:

"Farmers will not co-operate until they are down and out; then they will get in the game and pull together for a while." The farmer himself is usually to blame for his inability to co-operate. He has not felt the keenness of competition as the business man has. He has been trained along lines of production rather than the selling end of his business. He now finds himself face to face with the proposition that production is but half the problem.

Successful co-operation is based on absolute honesty. One of the best-known jobbers of fruit in the country published an offer that if an imperfect apple should be found, or if quality decreased from the top toward the bottom of any one of the several thousand boxes of a certain brand of western apples, that box would be donated to the person who would give the information. No one has yet claimed a free box of apples. There is no room for tricks of any kind. The Japanese potato growers on the Pacific Coast are said to be ruining the reputation of their product, by careless and dishonest packing, and we do not have to go to the western coast to find examples of this practice or the disastrous results from it. Farmers must learn to submit to a community standard. The average farmer, fruit grower or market gardener thinks that he knows his job as well as the next man. He thinks that he knows how to pack as well as the next, and even if his eye for good stuff gets dimmer the deeper in the package he goes, he still maintains that his stuff is as good as the next man's.

This idea nearly disrupted the co-operative grape association of northeastern Pennsylvania. The writer investigated the field during the grape harvest of 1912, and the growers themselves freely aired their views. The belt, consisting of a level strip from three to five miles wide along the lake shore, extending east from Erie, produced uniform grapes, and each year the product ripened well before the freezing nights appeared. Among the hills hundreds of vineyards were scattered. They produced large grapes, but the fruit did not ripen every year, and not always did the grapes produce the maximum amount of sweetness. The growers contended that their produce, altho inferior in quality, should command the same price as that from the vineyards with a reputation in the lowlands. The members of the association owning hill vineyards balked because they would be docked one cent on an eight-pound basket. This broke up the association. The hill people still get a cent less, and have pulled down the price of quality goods to the lower figure.

My attention has been called to a co-operative grain association that went wrong in Michigan. An elevator was located in the northern part of the state. Its promoters for a time paid one cent below Detroit markets. They thought they could coin a little easy money, and they dropped two cents below. There was no appreciable objections from farmers and another drop was taken. The kick was lightly felt, and they decided to take the chances and go four cents below the Detroit quotations. The farmers then got busy and organized a co-operative elevator. The grain dealers then decided that they could go the Detroit market a little better, and passed it by one cent. As soon as this move was made the farmers outside the association hauled their loads past the farmers' elevator to sell to the dealer, disregarding the fact that it was the co-operative movement that caused this higher price. This worked well for the buyers, and they shot the price up two cents above the Detroit market, and the weaker members of the association pulled out. At three cents above, the officers of the association started sneaking their loads by their own enterprise to go into the hands of the grain dealers. The backbone of the association was broken, the elevator was disposed of, and when the dealers saw the farmers' elevator sold and their oranization disbanded, down came the price, and the farmers have not had the nerve to revive their co-operative association.

Successful co-operators must learn the value of team work. They must lay aside all jealousies, produce quality goods, and realize that their next-door neighbors are essential factors in the general scheme. Out in western Michigan the dealers have got a rare hold on the product of a grape section. There happen to be two co-operative associations there, and they have the hill climbing clutch in, and are doing about as steady pulling in opposite directions as their finances and numbers will allow. Buyers are getting their own terms on products, just because the growers are not working together.

The leader of a well-known co-operative movement recently said: "Were I to do the work of organizing our co-operative association again, I would capitalize it with honesty and patriotism, rather than dollars." Before the farmer can successfully co-operate, he must learn to do team work, be honest about his product and have confidence in his association, the directors, officers and inspectors, and that when things go wrong temporarily he must stick to it until they go right. Then he will not want to quit.—Walter Jack, Ohio.

THE BROWN ROT OF PEACHES AND PLUMS

By Prof. W. J. Wright, New York School of Agriculture

Brown rot usually develops just as the fruit is ripening. This fungus lives over winter in the dried-up fruits which often remain on the trees, and since they are a source of infection they should be destroyed. It is also helpful to spray the trees with lime-sulfur (winter strength) before the leaves appear. The trees should also be pruned to let in air and sunlight.

In addition to these precautions summer sprayings are necessary where brown rot is common. The material most successful in combatting this disease is the "self-boiled" lime-sulfur. Spray with this mixture, first, about one month after the petals fall and, second, about one month before the fruit normally ripens. With late ripening varieties and when the season is hot and moist, a third spraying midway between these two may be necessary.

Self-boiled lime-sulfur is easily made at home, for it requires no boiling or artificial heat. It is prepared as follows:

Place 8 pounds of fresh stone lime in a 50-gallon barrel and add enough water to start slaking. When it begins to slake add 8 pounds of powdered sulfur and stir thoroly, adding more water as needed to make a thin paste. Break up all the lumps and fill the barrel (50 gallons) with water. Use full strength, first straining thru a fine sieve or coarse cloth to prevent clogging the pump and nozzles.

Self-boiled lime-sulfur, if properly made, will not burn the foliage of stone fruits. Commercial, or concentrated lime-sulfur, is almost sure to, if used in sufficient strength to control the rot.

Horticultural Queries.

This department is conducted by Prof. H. A. Surface, State Economic Zoologist. Questions answered and timely and practical problems in treatment and control of farm and orchard pests discussed. Our readers are given the benefits of the advice of one of the foremost authorities in the country in this department. Address all queries to Pennsylvania Farmer, Philadelphia, Pa.

High Pressure Not Needed in Spraying

Will you kindly advise me in regard to the correct amount of pressure to use in spraying for best results.—J. B. S., Alba, Pa.

I can say that this depends upon what you are spraying for, and the conditions, especially as to wind. If there is much wind, I like considerable pressure, and spray at right angles with the wind. Ordinarily, however, heavy pressure is not needed. I can assure you that I have seen San Jose scale cleaned up by pressure of less than 40 pounds. For the dormant spray no high pressure is needed at all, altho understand there is no objection to using it. In spraying for the codling moth there is some advantage in a certain amount of pressure, but this again depends upon how the work is done. If the nozzle is held over the little apples when they are first formed, no great amount of pressure is needed for this. The more carelessly the work is done, the higher should be the pressure, but I can assure you that in several of our demonstration orchards in this state, as at the Huntingdon Reformatory, Huntingdon, Pa., and the Reading Almshouse, we had 98 per cent of absolutely sound fruit from spraying at a low pressure with a barrel sprayer. When this is the case I can not see the need of high pressure spraying. We have, in fact, repeatedly had these results in practically every county of Pennsylvania, as thousands of persons are ready to testify from their own observations.

Deceived by an Agent

There is a party near here who is treating trees for scale and borers by boring into them and then puts a liquid in the hole, and claims and guarantees the trees will not get scale or worms for four years, and sometimes never be troubled with either. He charges from 10 to 50 cents per tree. Kindly tell me if this treatment is all right.—J. H., York, Pa.

I am very much interested in your statement that someone there bored a hole in a tree and put in a liquid, and says the trees will not get scale or worms for four years. I must say that his statement is absolutely false, and he should be arrested for getting money under false pretense. Borers in apple, pear and quince trees can be killed by putting the tip of a spring-bottom oil can into their hole, and injecting into each hole the liquid known as carbon bisulphide and then closing it with mud, but this is only because the liquid changes to a poisonous fume or gas, which kills the borer by poisoning or smothering, but not because the liquid has any effect on the tree. No liquid is taken up by the sap of trees, and it is all folly for anyone to say that trees can be helped by putting anything in their trunks.

I note with great interest that he claims to guarantee freedom from further damage for four years. If he will guarantee this by taking a note payable in four years, if it works satisfactory, this would be a good plan; but as he will no doubt refuse to do this, you can see that he does not have faith in his own remedy. I am sorry there is no definite law preventing this kind of imposition on agricultural people other than the law against getting money under false pretense.

No Pests Present

I have 100 apple trees, two years old from nursery, received and planted last fall, which appear to have San Jose scale; I am sending twig for examination. If they have scale, please advise how strong a solution I may use and not injure the trees.

I have some quinces which I think also has the scale; also two year old from nursery, planted last fall. If this is not the scale on twig, what are those small white spots on bark?—H. A. B., Williamsport, Pa.

For spraying dormant trees, bushes, shrubs or vines, you can use lime-sulfur solution as strong as you wish without hurting them. The small specks in the bark you sent us are lenticels or natural bark pits. It is by all means best to trim the strong buds from the top. In other words, cut out the central stems so as to force some side branches. Trim your trees to shape them.

I feel it my duty to suggest to you that there is great danger ahead of you. No man can go into business and expect success if he does not understand it. You will not be justified in going into horticulture until you learn horticulture as a profession or business. There has already been considerable loss from this, and there will be much more in the future. Of course, I shall be very glad to give you all the help possible, but that will be very small in comparison with what you will need.

The Shot-Hole Borers

Will you kindly advise me how to get rid of a small, black beetle that has attacked some of my fruit trees?

The beetle is small, black and smooth, and about 1/16 of an inch long. It bores small holes in the trunk and limbs of the trees. This summer it attacked a four-year-old peach tree and a six-year-old plum tree, and both died.

In cutting the tree up, I found that it has bored holes almost to the center of the trunk and along the bark of the limbs.—J. H., Scranton, Pa.

The beetle of which you write is no doubt the bark beetle. This is called by some the "shot-hole borer." There are several species, and one is called the "fruit tree bark beetle." The important point in its habits is that it attacks only trees that are declining. It is thus not really very inurious to healthy, vigorous trees. This means that you should keep the trees just as vigorous as possible. If, however, they commence to die, and these beetles attack them, the best thing to do is to cut them and burn them at once. Dying trees, or dying branches of a trees otherwise vigorous, should not be left to breed such pests. There is no remedy for them after they once attack a tree. Sometimes by severely cutting back an infested tree and cultivating it and fertilizing it it may be made to outgrow the infestation. The bark beetles attack the trees by boring into them and laying the eggs in holes, from which the larvae work side tunnels or gallaries and engrave the surface of the wood. Thus, they are also known as "Engraver Beetles." They are one of the causes of gum coming from peach, plum and cherry trees, but they work anywhere under the bark, and do not work out sawdust with the gum. As this gum can also come from other causes, it does not always mean that the bark beetles are present. Spraying with the lime-sulfur solution will help to prevent their attacks upon the bark of trees, but stimulating the vigor of the tree by proper horticultural treatment, and destroying by burning those parts that are dying, constitute the best means of treatment.

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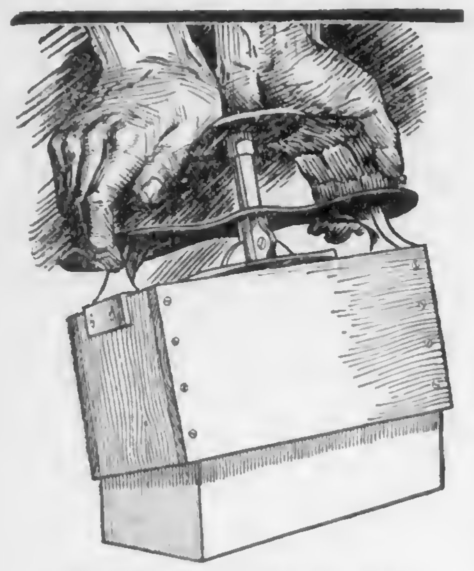

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Relation of Bacteriology to Handling of Dairy Products.

By Prof. W. E. TRIPP, State College, Pa.

We hear a great deal just now about bacteriology in connection with many different lines of commercial activity. What is bacteriology? We might say that it is the study of bacteria. But what are bacteria? The general idea, perhaps, is that they are some kind of bugs. Among bacteriologists, however, they are now considered as belonging to the vegetable kingdom, and are considered as one-celled plant forms. They are of different shapes and sizes, but are so small that they require to be magnified about 1,000 times with the microscope in order to study them. They are everywhere present, in earth, air and water, which accounts for foods of different kinds so easily becoming infected with them.

The housewife uses yeast in her bread making and perhaps never associates this same yeast with bacteria. Yet it is only a step higher in the scale of plant life, for the yeast is a one-celled plant, the same as the bacteria. There are also forms of yeast often found in the air called "wild yeasts," which in some industries give as much trouble as bacteria.

CHESTER COUNTY COW, 11 YEARS OLD AND STILL A MONEY MAKER.

How Bacteria Feed.—The bacteria take their food up by a process called "osmosis," the food being in solution and passing thru the cell membrane into the cell at all points. It is necessary that the food be in solution in order that it may be taken up by the bacteria. But if the material on which the bacteria happens to be is in solid form, how can they use it as food? We have in the saliva in our mouths, in the juices of the stomach and intestines, substances called "enzymes," which are of many different kinds, acting on different kinds of foods, changing them into soluble material which can be taken up by the different tissue cells of the body and thus nourish the body. All living things, whether animal or vegetable, possess enzymes for the same purpose, and it is by means of these substances that the bacteria are able to bring about the many different changes seen when food or other material is undergoing decomposition.

Bacteria can use many different materials as a source of nourishment, and milk is one of the best. Why? I have said that bacteria must have their food in a state of solution. This implies the presence of moisture. This condition is fulfilled by the large amount of water in milk. They must have nitrogen and other elements for the building up of the cell. These elements are abundantly furnished by the casein, sugar and salts.

Then if the milk is kept at a temperature suited for the rapid growth of the bacteria present, they will act on the milk, converting it into acids of different kinds, and many other substances, some of which are decidedly offensive to the taste and smell. Some of the substances produced by bacteria in foods containing nitrogen, like meat, fish and cheese, are extremely poisonous.

Sources of Bacterial Infection.—Where do the bacteria found in milk come from? They come from several different sources. We may mention, first, the interior of the cow's udder. Bacteria lodge in the small amount of milk always left in the end of the teat after milking, and multiply and make their way into the higher parts of the udder, and are thrown off in the next milking, and develop in the milk if allowed proper conditions for growth. Many bacteria come from dust and dirt on the cow's body and fall into the milk pail during milking. Feeding of dry feed for at least an hour before milking or any operation which stirs up dust in the barn should not be permitted, as each particle of dirt, straw, etc., carries its load of bacteria, and may find lodgment in the milk pail.

The milker should be clean in the matter of clothing and person, and no one having any contagious disease, or who comes in contact with one who is ill with such a disease should be allowed to handle the milk without first disinfecting himself very thoroly.

A frequent source of trouble is unclean water supply used for washing the milk utensils. It is very important that the water be free from the germs of any contagious disease, as these germs may lodge in the milk vessels during washing, and if the vessels are not thoroly sterilized the milk will become contaminated, and trouble is liable to arise. Besides disease germs, there are many other kinds which may gain access to the milk thru unclean conditions of barn or milk-house, and improper handling of milk.

Effect of Infection.—There are bacteria producing large amounts of gas, which, if the milk is used for cheese making, may cause no end of trouble. These also often produce bad flavors in butter when made without the use of a good starter, as is often done on the farm. Other varieties of bacteria produce colors of different kinds, which develop in spots on the surface of the milk after it has stood for several hours. We have blue, red and yellow milk, the first named being most common. These colors develop only in presence of air, and hence are seen on the surface.

Another condition called ropy or slimy milk occurs occasionally, produced by several different varieties of bacteria. These bacteria require air for their best development and consequently this condition of ropiness is found in the upper layers of milk, where the bacteria can get air. These bacteria get into milk sometimes from the wash water used in washing the pails and other utensils, and have been found in nature on the leaves of certain plants. They are rather difficult to kill by the ordinary method of washing and scalding the milk utensils, and require very thoro scalding or steaming with live steam in order to kill them.

Other bacteria produce bad flavors and odors in milk and it is safe to say that the larger part of the odors and flavors noticed in milk are caused either by the milk standing exposed to unclean air and absorbing these taints, or by bacteria. Aeration helps to remove any odors that may have been absorbed from foul air, provided that the room in which the aerating is done is kept clean and free from odors.

What has been said thus far relates chiefly to the different species of bacteria, their manner of growth and how they produce different compounds, such as various acids, gases, etc. This knowledge has been obtained by the study of bacteriology, and pertains to the scientific or theoretical aspect of the subject. Now let us turn to the practical application of this knowledge. In the production of dairy products we have learned from experience that it is very necessary to be able to control the development of bacteria in the different products as completely as possible. This knowledge also comes from a study of bacteriology.

Clean Milk.—First, let us take up the subject of clean milk. By clean milk I do not mean milk which, when placed in the milk bottles, does not show any sediment. The term is used in a bacteriological sense, and means that, in addition to being free from dirt, it contains comparatively few bacteria.

I say comparatively few, because different cities have different bacteriological standards or limits of numbers of bacteria allowed in milk in order for it to pass inspection. Milk sold in large cities many times has to come from a longer distance than that sold in smaller cities and towns, therefore requires a longer time to reach the consumer, and is therefore very liable to contain more bacteria. This requires a somewhat higher standard for this milk. The three factors which most largely determine the number of bacteria in any milk are: (1) The number getting into the milk at the time of milking; (2) the temperature at which the milk is held; (3) the age of milk.

Of these three, perhaps the principal is the temperature used. A dirty and a clean milk may start from a certain point, shipped to a distant creamery. If the dirty milk is iced, while the clean milk is not iced, the chances are that the dirty milk will have fewer bacteria than the clean milk by the time the destination is reached. This shows the importance of keeping milk cold, which prevents bacterial development.

Producing Clean Milk.—Now how can we produce clean milk? Let us turn our attention, first, to the barn and its surroundings. The barn should be situated so that the drainage does not flow towards the well or other water supply. This is of very great importance and should be carefully observed. The barn should be well lighted, not only for the health of the animals, but because sunlight hinders the growth of bacteria. It should be well ventilated, but not drafty. A strong draft of air thru the barn is not good for the cows, and fills the air more or less with dirt, which means many more bacteria that may gain access to the milk pails while milking. The less woodwork there is about the stable the easier it is to keep clean. Floors of cement which can be flushed with a stream of water and easily drained are very desirable. This also applies to mangers.

Walls should be kept free from dirt and cobwebs, and a good coat of whitewash applied to the walls and ceiling at least twice a year is advisable. This acts as a cleansing agent and helps us to see the dirt as it collects. The milk room should be so situated that it is not exposed in any way to the air of the stable, and so that any foul odors can not come in contact with the milk. The barnyard should be dry and clean, so that the cows will not get mud and manure on their legs and flanks, to dry on, and subsequently be brushed into the milk pail. Remember every particle of dirt or filth carries bacteria.

The cows should be clean, the flanks and udders should be clipped, and just before milking the flanks and udder should be wiped off thoroly with a damp cloth. This is much better than brushing, because it prevents any dust particles being thrown off into the air, and possibly falling into the milk pails. Milk utensils should be rinsed at once after each milking with warm water, then thoroly washed with hot water and soda, using a stiff brush for this operation. After this they should be rinsed with scalding hot water, and when possible treated with a jet of live steam. If this latter operation is not possible, exposing the utensils to sunlight is advisable, meanwhile keeping them protected from flying dust and dirt. The person who does the milking should understand the importance of cleanliness. The hands should be washed carefully before milking, and preferably after milking each cow. The clothing should be white, so that it can be readily seen whether it is clean or not. White caps should also be worn.

Straining Milk.—The use of the ordinary wire gauze strainer, or the piece of cheese cloth is not advisable, because neither will prevent bacteria from passing thru into the milk, from the dirt which collects on the strainer and which is being constantly washed by the milk striking on it. If milk is dirty enough to require straining, a thick layer of absorbent cotton laid on the wire strainer of the milk pail will not only hold back the dirt, but bacteria as well. The cotton can be thrown away after milking.

The ordinary method of straining milk improves the appearance often times at the expense of the keeping quality, and milk that has been produced under the above described clean conditions will keep just as well, I believe, without being strained, if kept in ice water. It can be said of aerating that it is of doubtful utility, because this often exposes the milk once more to unclean aerators and to impure air, which adds more bacteria to the milk, thus reducing its keeping quality.

Aerating Milk.—Aeration removes odors due to strong feeds given the cow or these odors absorbed from impure air. If milk is produced under proper conditions this will not be necessary. The cooling, which is also generally done with the aerator, can be done better by standing cans in ice water, using 8 or 10-gallon cans. I believe that if milk is properly produced, the method of bottling at once, without straining, aerating or other exposure, and placing in ice water or in the ice box, is not only the ideal method, but a practical one as well.

To summarize, bacteria are present everywhere, and it is only by taking all possible precautions to prevent them from getting into the milk that we can hope to have clean milk. In other words, have all utensils coming in contact with the milk absolutely sterile or free from bacteria, and handle and expose the milk as little as possible.

In the preparation of butter or cheese the results obtained will depend largely on the kinds and number of bacteria found in the milk from which these products are made. Therefore the foregoing information will be as useful to the butter or cheese maker as it is to the dairyman.

SUPREME COURT DECISION ON MILK REGULATION

The United States Supreme Court has just rendered a decision upholding the right of municipalities to fix regulations for the inspection of milk and the tracing of unwholesome milk to its source outside the municipality. The case was brought up from Milwaukee, the authorities of that city having prevented the sale of milk from diseased dairy cattle from entering the city, and also having directed the destruction of such cattle.

Certain milk producers of the city attacked the right of the authorities to take such action, and also the validity of the city ordinance under which the health officers acted. This ordinance, which gives the authorities power to trace suspected milk to its source, to inspect dairy herds and to order the condemnation of cows shown by the tuberculin test to be diseased, is considered one of the most drastic measures that has yet been adopted by any municipality. The Supreme Court decision is that the ordinance is valid as an exercise of the police powers of the state thru a municipality acting under a charter of the state.

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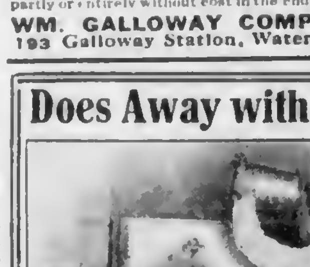

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Poultry

WARM VS. COLD FEED FOR LAYERS

I do not see how anyone who has ever tried it can doubt the wisdom of giving warm food in winter. And yet I read an article a few days ago wherein the writer claimed that nothing should be given warm—possibly the drinking water might be slightly warmed on a cold morning. He added: ''Good physicians tell us that nothing of a higher temperature than this should ever be taken into the stomach, and that highly heated foods and drinks are prolific sources of weakness and disease. Is it not fair to assume that the effect is the same upon the systems of the lower animals'' He claims they are benefited in no way by being fed hot foods, but that the practice tends to produce colds and roup.

There are always two sides to a question. Medical Brief says: ''Cold-blooded people, who have little thirst, will do well to make a business of drinking a certain amount of hot water every day thruout the winter season. It lessens the tendency (mark this) to take cold, improves the circulation and benefits coughs and insomnia. Many cases of indigestion, headache, neuralgia, cold hands and feet can be cured in half an hour by drinking slowly one or two pints of water so hot that it almost burns the throat.'' Now I ask again, with the writer above referred to, ''Is it not fair to assume that the effect is the same upon the systems of the lower animals?''

A GOOD TYPE OF COLONY HOUSE.

My flock did not have a cold feed nor a cold drink last winter. The lowest daily yield last winter was 13 and the highest 20, the latter number being just half of the flock. Last year, on February 16, the daily yield was 16, and mercury registered 16 degrees below zero. If any of the cold food advocates can beat it I would like their recipe.

The first week in February they laid 84 eggs; the second week 105, and the temperature ranged from 10 to 16 degrees below zero most of the time. A lady told me a few days since that she has a flock of 70 hens but did not have an egg last winter. Similar reports come from many others. Some say, ''I don't see how it is that your hens lay so when we can not get an egg, try as we may. Well, if they could stay with me a week or so they would at least see considerable ''fussing,'' as some of them have termed it. Even as I write a kettle of chopped clover is steaming on the range and a pail of wheat is being warmed for their supper. The account book shows them charged with oyster shells, meat scraps and poultry food, but they have considerable to their credit yet, which will be reported in due time.

Again I say, if you want eggs don't impose upon your hens by making them put up with cold feed, cold water and cold weather. The three, combined or singly, will not produce eggs.—J. M. W., Wayne Co., Pa.

PRESERVING EGGS

At this season of the year the economic housekeeper is looking forward to next winter's supply of eggs for the family use by preserving now while they are cheap. Some people tell us they would not eat these preserved eggs, they always buy fresh ones; yet these same persons pay for eggs at strictly fresh prices and get storage eggs that, in many cases, are stale and spoiled before being put into storage.

Too few people who market eggs are particular, during warm weather, in gathering their eggs from the nests. They should be as prompt now, when the thermometer is 90 degrees to 100 degrees, to gather them several times a day as in the winter, when there is danger from freezing.

However, to avoid this trouble, if all male birds are taken from the flocks after the hatching season is over there will be no danger of getting spoiled or started eggs, since a flock without a male will produce the germless or sterile eggs, and just as many, if not more, than with a male.

In preserving eggs, only clean eggs should be used; avoid washing, if possible, and examine to be sure none are cracked. There are two kinds of preservatives used in this section, water glass and lime water.

Water glass is a liquid solution of sodium silicate, and can be bought at any drug store, and also is sold by many of the mail order houses. It is generally used 1 part water glass to 8 parts boiled water. Boil the water and let it get cold before making the mixture.

The lime solution is made by using slaked lime; a half teacup of the lime cream to one gallon of boiled water.

The eggs should be placed in a jar by packing on ends, and the liquid of either kind poured over them to the depth of at least several inches above the eggs, then covered to prevent evaporation.

In either solution eggs can be added at any time, but should be well covered with the solution. Many farmers in this section preserve eggs when cheap for family use, and sell their fresh eggs during the winter when they are high in price.—Frank Kline, Chester Co., Pa.

SHALL WE ENCOURAGE EARLY MOULTING?

With eggs at nearly two shillings per dozen I see no good reason for stinting the hens in feed and inducing them to stop laying to moult. Eggs may be produced 50 percent cheaper now than after cold weather comes, when the hens are confined within doors. Then, as soon as prices advance, the cold-storage eggs will be for sale and the price will drop. This storing eggs tends to equalize prices; therefore, if eggs go abnormally high it is only after the storage supplies have been exhausted. Such was the case last winter, when, for a short period, eggs went almost out of sight. If scanty feeding will induce moulting, why will not an increase in their ordinary rations cause them to retain their coats and lay more eggs In my opinion it is more feed that hens need just at this season, for they are nearing the close of the laying period and their natural powers for the season are waning.

The Production of Both Feathers and Eggs

Tho seeming like a foolish statement, I believe that hens may be made to lay quite a few eggs while moulting. It requires heavy feeding and good digestion, but it can be done. Many persons say the hens will not lay anyway while moulting, so what is the use of feeding them much. So, instead of receiving more feed at this time they receive less. They stop laying and, while slowly growing a coat of feathers, are continually decreasing in flesh. Cold weather comes on and very superior care and feed are required for two or three months to get them to laying again. I am satisfied that most hens receive too little feed during the late summer and fall months. A run in an oat field where they could eat to satiety, caused my hens to gain 50 to 100 percent in egg production.—Clark M. Drake, Steuben Co., N. Y.

THE LANCASTER COUNTY POULTRY SHOW

Lancaster County, Pa., is the richest agricultural county in America, and its fair association has lately elected Mr. W. Theo. Wittman, well known for his work with the great Allentown Fair Poultry Show, as manager of the poultry department. This means that the Lancaster Fair Poultry Show will hereafter be on the map and add one more to the list of great fall fair poultry shows.

For this first year the entry fee will be only 50 cents, with liberal premiums and with good management and good care of the exhibits absolutely guaranteed. Two express companies also guarantee good shipping service. The poultry building is now being entirely rebuilt, and will be a magnificent poultry show hall by the day the fair opens.

For those who in past years would have liked to show at Allentown, but have felt that the dollar entry fee there was too high, the Lancaster Fair offers a splendid chance to exhibit. Again, Lancaster will be the week after Allentown, and it will be an easy and short haul to ship from one to the other and many will want to make both shows.

Premium lists will be ready some time in July and can be had by addressing the secretary, J. F. Seldomridge, Lancaster, Pa.

POULTRY FACTS

I read in notes on ''How to Raise Young Chicks,'' that corn meal and cracked corn were not good for them. I would like to give my experience: I have raised chickens for a number of years and very seldom have lost one after they were hatched and fairly started. The first week I give them white bread soaked in water and some boiled potatoes; but as soon as they can swallow it, I give them cracked corn for their main diet, with cooked potatoes and a little meat scrap. They also have plenty of grit, which I supply fresh every day. I have never had a case of diarrhoea in all my years with chickens.

In another article I read it did not pay to feed for winter eggs. I have fed for eggs in winter for two years, and my flock of 55 hens, in 20 days, from March 29 to April 17, layed 925 eggs, and this after they have layed all winter, or since December 1st. They are pure-bred Barred Rocks of the Thompson Ringlet strain, and we are getting 38 to 45 eggs per day now. I can not see as they have dropped off any because they layed all winter. They are bred to lay and also for size.—A. C. Cotton, Crawford Co., Pa.

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CHICKS S. C. W. Leghorns, 8c each. Will ship C. O. D. Will return money for dead ones. Pamphlet on chick feeding free. C. M. LAUVER, Richfield, Pa., Box 13.

Grange

This department is conducted by R. P. Kester, Lecturer of Pennsylvania State Grange. Notes, queries, comments and news of grange work are invited from readers. Obituary notes and news of purely local interest can not be used. Address all communications for this department to R. P. Kester, Grampian, Pa.

MUSIC IN THE COUNTRY

We read a great deal in the farm papers about cows and orchards and soils, and rotation of crops, but little about the building of a better rural community. Cattle and horses and lands and crops of all kinds are of small import when compared with the building of human character, and sometime the whole world will come to realize that the making of a living is a small matter, indeed, when measured along with the making of a life.

The building of a good rural community should be a matter of great concern in the minds of all who wish to truly serve while they live. One of the greatest influences in the building up of the right social atmosphere in the country community is good music. Almost everyone loves music, and yet there are comparatively few people who can sing, and we must go to our cities and villages to find them in most cases. The boys and men are sadly lacking in our choirs. It is my privilege to travel pretty well over our state from year to year, and to listen to many choruses and songs of other kinds, and the male voices are largely wanting. Our boys can sing as well as our girls if they have the chance, and it is for us who live in the country to give them that chance.

We have been in the habit of placing far too low an estimate upon the capabilities of our boys and girls in the country. In music, art and oratory, we have habitually gone to the city for results, and have forgotten that right here in the country we have a class of boys and girls who are quite as capable as their city cousins, and much more apt to succeed because they are not afraid of work, and it always takes work to bring success.

Fifty years ago the singing school was very common in country communities, and it was not an uncommon thing to find excellent choirs and choruses scattered here and there, miles from any town. The writer has taught thousands of country boys and girls to sing, and when he writes of these things, he is talking from experience, and not guessing.

He well remembers the first time he tried to lead his neighbors in a little song. It was years ago, and he was only a boy. The song was '' 'Twill All be Over Soon,'' and the only real comfort in the experience was in the title Those boys and girls would not have encountered the slightest risk if that old tune had been dynamite, for they did not hit it hard enough to have produced even a possibility of an explosion. But later we talked the matter over and it was decided that I should start a singing school. It was my first attempt at that sort of work, and it was poor enough, but it was a start, and there came a time in the years that followed when we had scarcely a boy or girl in our neighborhood who could not read notes.

No one knowing the results obtained can doubt the power of song in the shaping of the lives of the young people in our locality. Here was one of the best country choirs I ever heard, in the years of which I write. Our old church rang with choice harmonies and sweet bits of solo work, performed by voices that have since been atuned to Heavenly Melodies. Often now, after other cares and other interests have claimed our time, it is our delight to find time to lead the choir again in the same old place. It is not the same choir, for some of them have completed the labors of life's day years ago, and some, who still are here, are so occupied with other matters that they seldom sing now. But their children are here, and together with those who are older, we still have our choir, and do better work than we did in the days that are past.

We are beginning to realize again the value of song, and there is an effort in many localities to revive the old-time singing school. In some places the granges are taking up the work, and in some localities it must be done by the country church. It does not matter so much how, but the work should be done. Few of us realize what a splendid chorus means in the building of a good rural neighborhood. Its power in developing ideals in the hearts of the young is greater than most of us have thought.

We talk much of legislative reforms, of the initiative and referendum, the parcel post, government ownership, and many other questions great in themselves, and important in the building of our commonwealth. We often complain because our progress is so slow in legislative matters, but we forget that law is the expression of the will of the majority, and that before we can have law at all, we must have the ideal. It is the things we learn to love that impress us and direct our lives. We need wise and just laws to restrain those whose selfishness and greed are a hindrance to our progress. But to really grow, we must provide those influences all along the way, in the home, in the school and in the community. And it is best done in every case by developing individual character.

The feeble, halting quartette that takes the place of a choir in many of our country churches should be encouraged, poor and insufficient tho it be; and all help. Did you every try to think what would be the result if everyone in your vicinity who can sing should receive training, and if all should unite in a splendid chorus in your country church? Don't you believe there would be fewer empty pews? Did you ever try to measure the possibilities for good in a rural community where the power of song was developed in the greatest possible degree? Few boys would go wrong in a community like that, while the lives of some would be enriched beyond our fondest hopes. We want to make the country the best place in which to live, and one of the ways of doing this is to develop in young and old the power to sing.

Let us revive the old-time singing school. Let us avail ourselves of private instruction whenever possible, and while we develop our talents, let us use them for the upbuilding of our neighborhood. It is our neighborhood. Here lies our work and our promised reward. —W. F. Taylor, Michigan.

CO-OPERATIVE CORPORATIONS AND BUREAU OF SUPERVISION

New York has a new law relative to co-operative corporations, the main provisions of which are as follows: Five or more persons may become a co-operative corporation, company, association, exchange, society or union, for the purpose of conducting a general producing, manufacturing and merchandising business on a co-operative plan, in farm products, food supplies, farm machinery and supplies and articles of domestic and personal use. All such corporations must be managed by a board of not less than five directors, who shall be elected by and from the stockholders. The officers are such as are usually chosen for corporations. The aggregate par value of shares which one person may hold can not exceed $5,000, and each stockholder is entitled to one vote and only one, irrespective of the amount of stock which he may hold. The written vote of an absent stockholder, if signed by him, shall be received and counted, provided he has been notified in writing of the exact motion or resolution to be voted upon.

The law permits stockholders of one co-operative corporation to hold stock in any other co-operative corporation on majority vote. It is also permissible for a co-operative corporation to buy the business of another corporation under the restrictions and regulations prescribed by this amendment.

The net earnings of the corporation are apportioned by first paying dividends at a rate not exceeding 6 percent per annum, and not less than 10 percent of the net earnings shall be set aside as a reserve fund until such reserve fund shall equal 30 percent of the paid-up capital stock. There must also be set aside annually 5 percent of the net earnings for an educational fund for the purpose of teaching co-operation. Then the remainder of the net earnings shall be distributed by uniform dividend to members of the first class and of the second class. Members of the first class include stockholders and employes, and members of the second class are non-stockholders who shall do business with the corporation amounting to not less than $100 during the fiscal year of the corporation. Dividends are to be paid on purchases amounting to $100 or over from or by members and on the amount earned by each employe during the fiscal year.

Dividends at double the rate to which members of the second class are entitled are paid members of the first class and employes. In such productive corporations as creameries, canneries, elevators, factories and the like, dividends are calculated on raw material rather than on goods purchased. If the corporation is both a selling and a productive concern, dividends may be on both raw material delivered and on goods purchased. In case any co-operative corporation fails to declare a dividend for five consecutive years, five or more stockholders may petition the supreme court for dissolution of the corporation on those grounds. Existing co-operative associations now doing business in the state may, by majority vote of their stockholders, accept the provisions of this law. Hereafter no corporation can use the term ''co-operative'' as part of its corporate name unless it shall incorporate under this article of the new law. The act takes effect immediately.

One of the chief objects of this amendment to the business corporations law is to enable a company of persons to unite for the general purpose of disposing of their products, such as are named above, to better advantage to themselves, while at the same time they can, as a corporation, deal direct with other like associations in the cities, thereby doing away, to a certain extent, with the services of the middle man and so reduce the cost of products to the consumer.

The Bureau of Supervision

An amendment to the agricultural law relates to the creation of a bureau of supervision of co-operative associations. The superintendent of the bureau is appointed by the commissioner of agriculture and receives a salary of $3,000 a year and necessary expenses He will have general charge of the development of agricultural co-operative associations for the buying and selling of farm products thruout the state. He will have, as part of his duties, the promulgation of such information as he may possess for the increase of co-operative associations of this class, and from time to time he will visit such associations as have been formed, and give them the benefit of his counsel in the management and conduct of their affairs. It is his duty to report quarterly to the commissioner of agriculture the results of his endeavors and the condition of co-operative associations within the state.

This measure has also in view the securing to producer and consumer the benefits that accrue from co-operative effort, and it is believed that having an expert in charge of the organization and management of these associations that more practical results will follow.—J. W. Darrow.

An Active Grange.—Freedom Plains Grange, of Dutchess County, N. Y., is identifying itself with local and town interests in a commendable way. Six members of that grange are school trustees in their respective districts, and the supervisor of the town, the highway commissioner and all the town assessors are also members.

Everybody Grangers.—Chautauqua County, N. Y., is notable for its grange activities. It has 7,500 grange members and two granges have exceeded 600 members each. Fifteen granges own their own halls, which are valued at about $30,000. The Patrons' Fire Insurance Company carries $11,168,802 in policies. In this county is located old Fredonia Grange No. 1, still flourishing with its over 600 members.

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AGRICULTURE THE KEYSTONE OF NATIONAL PROSPERITY
ESTABLISHED 1880 PUBLISHED WEEKLY

Established 1880. Published Every Saturday.
Entered as second-class matter at the postoffice at Philadelphia, Penna.

The Lawrence Publishing Co., Proprietors
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214-216-218 South 12th St., Philadelphia, Pa.

Branch Offices For Advertising Only
Cleveland, O., 1011-1015 Oregon Ave.
New York City, 41 Park Row.
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TERMS OF SUBSCRIPTION

One Year	52	copies to one person	$0.50
Two Years	104	" " " "	$1.00
Three Years	156	" " " "	$1.25
Five Years	260	" " " "	$2.00

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RATES OF ADVERTISING
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Philadelphia, Pa., June 7, 1913.

TEMPERATE OFFICIALS

The Roosevelt slander suit against the Ishpeming newspaper man attracted wide attention. It was not a particularly pleasing reflection of American standards in public life to have an ex-president and one of the best-known national leaders defending his reputation for temperate habits in a common slander suit. Every right-thinking citizen rejoices in the outcome of the suit, regardless of political faith or personal regard for the man involved. Regardless of the testimony showing the indifference to strict temperance thru the occasional use of liquors, every serious minded citizen is glad that the charges of even occasional drunkenness were found to be without foundation. Many were asking if the suit, with the resulting publicity of personal habits, was worth while. To a man who has a large and powerful following, and who aspires to continue in such leadership, either as a private citizen or as a public official, the complete denial of charges of intemperance is certainly worth while. It may be nobody's business if the private individual drinks, or if he occasionally becomes intoxicated. The characteristic indifference of the American people towards the question of temperance as a national problem has fostered the idea that drinking is a private and individual question. But even with this indifference, there is a fixed place in our classification of society for the occasional as well as the habitual drunkard. If a man wishes to place himself in that class, it may be nobody's business but his own. But it is not the class from which our national leaders and public officials are knowingly drawn. With all of our tolerance of intemperance, which we sometimes choose to call liberality of opinion, it is doubtful if President Wilson has performed one single act since his inauguration which has met with such popular approval as did his banishment of all intoxicating liquors from the White House, and from all public functions in which he takes part. As compared with the graver questions of national policy and official duty, this simple act may be of small consequence, but it is one of the many little things which go to measure up the character of the man. Strict abstinence from the use of alcoholic liquors may not be essential to the actual qualifications of the chief executive of the nation, but in the example and influence of character upon his followers and the influence upon the great moral question of temperance it is immeasurably worth while. At the conclusion of the slander suit, Colonel Roosevelt waived claim to all damages, declaring that the clearing of his reputation of false and slanderous charges was his sole purpose in pushing the suit. He acknowledged that it is very much the public's business whether or not our public men are addicted to such habits.

LONG LEGISLATIVE SESSION

The present session of the Pennsylvania legislature threatens to break all records for expense and length of time consumed. The cause can be found almost entirely in the state senate. With members from three parties pledged to specific reforms and agreeing fairly well on general principles in state issues, the voters had reason to expect that a large amount of desired legislation would be disposed of in a short length of time. The house has fulfilled these expectations and has disposed of a record number of bills. It has been criticised for passing favorably upon too many measures, and giving attention to bills of minor importance. But it has been working, and when the summary of the session's work is complete, it is probable that the present house will be found to have done more in inaugurating and enacting needed, popular laws than any other house in recent years. With the right kind of support from the senate, the session should now be closed. But the senate is still playing politics, and bills have been handled by committees to secure political advantage and delay action rather than to give the people the legislation promised in party platforms and campaign pledges. It is very apparent that a certain element in the senate is finding some of the new legislation distasteful, either as bearing upon its "inside interests" or upon its system of politics. It has sought to delay the enactment of this legislation as long as possible, apparently with the hope of some contingency which would justify its defeat. The election reform, child labor, public service commission and employers' liability bills are to be a feature of this week's session, and it is evident that they must be disposed of before the mass of other bills passed by the house can be acted upon. The people have a right to expect that the senate will settle down to business and fulfill all pledges in its action on these measures. If it does not, responsibility should be placed right where it belongs, upon the reactionary element in the senate.

COMBATTING THE FLY

Only within the last few years has the immense amount of damage done by the fly been realized. A national campaign of warfare is being waged against the carrier of filth and disease, and success along this line is impossible without the honest co-operation of every individual. The farmer can help in this work more than any other class of people, since the farm is the greatest center of fly infection. The cities are making a vigorous effort to do their share in destroying the fly. Laws are in force compelling owners of stables to remove manure once every 24, or in some cases 48 hours, and it behooves the farmer to uphold his end by just as effectual methods. The most common breeding places for flies are in manure and accumulations of filth. The adult deposits her eggs in decaying animal matter and soon after the maggot hatches. After a short period the maggot changes to the adult and the cycle is complete, only to be repeated within the next few hours. Cultures have been made, showing that the fly is one of the greatest carriers of disease. These are made by allowing a fly to crawl over a dish containing agar-agar, or some substance in which disease spores and bacteria will readily develop. The dish is then put into an incubator where the temperature and moisture conditions favor bacterial development. In 10 days or two weeks the spores or bacteria multiply and group themselves into colonies, according to their class, and from these colonies the disease carrying proclivities of the fly can be determined. From such tests it has been demonstrated many times that tuberculosis, typhoid fever, malaria, tetanus, cholera and many other dreaded diseases are spread by flies. Tests have also revealed the fact that a fly in a baby's milk for one second menaces the life of the child. Can we afford to jeopardize the life and health of our family and ourselves by allowing this carrier of filth and disease on our farms? The first step to be taken is care of the manure pit. Haul the manure out on the fields as soon as it is made, unless you have a covered pit. Keep the barnyard clean and free from filth so that no place shall be afforded where the fly can breed. Give especial care to the outhouses, for much typhoid fever results from carelessness as to this point. Have them cleaned regularly, and use an abundance of chloride of lime so that the danger is reduced to a minimum.

LOADING MILK

A dairyman of Altoona, Pa., has filed a complaint with the state railroad commission to determine the interesting question of why dairymen alone, of all shippers of goods by railroad, should be compelled to load their own product into the cars. This is said to be the first time that this matter has been presented to the commission, and dairymen thru the East will watch results with interest. The increasing and sometimes nonsensical demands laid by municipal boards of health upon the milk trade have increased the burdens of both railroads and milk producers in the production and transportation of this commodity. Because of these demands, the railroads have attempted to force as much of the added work as possible upon the dairymen, until, in many cases, they are imposing requirements upon the milk shippers that are not required of any other class. The requirement in loading is but an example. In many sections the farmers are compelled to wait at railway stations for trains to arrive, load their cans and receive empties, and thus lose valuable time from their farm duties and perform a work that should be done by the train crews, and is done for every other class of shipper. The test case should clear up this adverse discrimination.

PENNSYLVANIA LEGISLATIVE NEWS

Uncertainty the Feature.—Uncertainty as to time of adjournment, as to fate of so called big legislation, as to amount of appropriations and size of revenue mark the present stage of one of the most extraordinary legislatures of recent years. Already the legislature has run longer than any session since that of 1901, when it remained here until June 27th, thru complications over the United States Senatorship and a multitude of bills. The legislature has been in session since the sixth day of January, and yet less than 250 bills have become law up to this date. The legislation relative to the $50,000,000 bond issue for improvement of roads is almost the only important matter to get thru all stages. Everything else is incomplete. No one can foretell the outcome on child labor, workmen's compensation or employers' liability, public service commission or other bills. They are directly responsible for the failure to fix date for adjournment, as the house does not want to have these measures crowded up against a specified time for fear that legislative history may repeat itself and certain legislation never become laws. It appears to be pretty well established now that nothing will be done concerning adjournment until the election bills and other measures reach the governor. The appropriation situation is serious because there has been a spirit of liberality out of proportion to the income of the state. Large sums have been recommended when it is well known that there must be some cutting down by the governor. However, that is one of the singular farces of legislation, and every session sees bills put up to the governor when everyone knows that they can not be approved.

The Compensation Bill.—What seems today to be a majority of the senate does not want the application of the liability law to be binding upon every employer, but only on those who desire it. As the bill stands now, every person employing labor, including the farmer and the housekeeper, must comply with the requirements to provide for persons injured while in their employ, only casual employes being excepted, but an employe is given the right to say whether he desires to have the law enforced as regarding him. Senators from agricultural counties take the position that the law should be so worded as to exempt the small manufacturers, the farmer and the merchant who can afford only a clerk or so, and are insisting upon the elective clause in regard to enforcement. The governor and men prominent in politics are insisting upon the mandatory provision, pointing to the fact that the platforms of the three leading political parties declared for it, and that to fulfill pledges a stringent law must be passed. The governor also says that a system of compensation is bound to come, and that if not passed this time a more drastic bill may be put thru next time. The men who realize the strength of the governor's argument argue that in the effort to get the big employers of labor all of the little ones are caught, too. This week will see the fight on the bill in the senate, and it is regarded as a foregone conclusion that the house will refuse to accept the bill with the elective feature, which will mean a conference committee and possibly a deadlock, as is anticipated upon the election reforms. The latter are so involved that few can tell offhand what their effect will be.

Want Immediate Action.—In addition to the men connected with political parties who are contending for various things in election laws, there is a growing demand for action on a bill to meet needs of the year. Something must be done to provide for the elections this year and also to take care of the United States constitutional amendment that senators be elected directly by the people. Unless something is done there will have to be a return to the old state convention method of nominating state officers, and no method will be at hand at all for direct election of a United States senator. The trouble is that there is so much jockeying for position in parties that popular interests are not being much considered.

Road Legislation.—The act to submit the question of the constitutional amendment for the $50,000,000 bond issue to the people in November is about to be signed by the governor. This is known as an enabling act, and is most important because it specifies just when and how the matter shall be laid before the voters. The township road law is still pending, and the bill to provide a million dollars to pay the deficiency in the work tax bonus is now up to the governor.

No New Food Laws.—The cold storage law is about the only food legislation of consequence to pass this session. The so-called pure food law, which would have absolutely prohibited use of any foreign matter in foods was killed in the senate. The cold storage law will become effective on August 16. It is expected that by the same time the bill to allow state inspection of all hotels and places where food is prepared for all manner of public eating houses and for medical inspection of employes will also be in operation. At this writing the bill to establish standards of weights and measures for commodities and for county sealers of weights and measures in all counties is pending.

No New Bureaus.—The men in charge of framing the general appropriation committees have determined against the creation of new bureaus in the department of agriculture, arguing that the proposed bureau of statistics will be unnecessary because the new department of labor and industry will make a specialty of statistics of all kinds of productive labor and output and that the bureau of poultry is a bit advanced, the State Live Stock Sanitary Board having authority to exercise what supervision is needed in that direction.

State College Appropriation.—The State College appropriation, as reported from the house committee, carries the sum of $1,450,000—the largest ever recommended. It is to be hoped that state revenues will be sufficiently elastic to enable the payment of that amount, together with $1,500,000 to the University of Pennsylvania, and $1,000,000 to the University of Pittsburgh and other large educational allowances. In addition to the sum mentioned, which will include new buildings and maintenance, the state is also to make an appropriation of $20,000 for agricultural extension work. This latter sum is to meet the federal government's offer of aid and will become a fixed policy. The extension work also received additional impetus by the approval of the bill to allow counties to make appropriations for agricultural study and soil survey in conjunction with the college.

Clover for State Flower.—State Zoologist H. A. Surface, has presented legislators in the last week with handsome bunches of the red clover blossom, which he suggests should be considered as a more fitting state flower than the violet, already the flower of other states. The desks of the presiding officers have been adorned with the clover upon several occasions.

Will Name Instructors.—About July 1, if the general appropriation act is effective by that time, the department of agriculture will name the 10 agricultural instructors to have charge of the field work. The details of this plan are now being worked out.

More Game Legislation.—A senate bill pending in the house has attracted attention because it proposes to change the quail season already fixed by one bill enacted into law. It provides that quail may be shot from November 1 to 30, inclusive, and rabbits from October 15 to November 30, inclusive. It repeals the provision in the act already approved.—Hamilton, Harrisburg, June 2.

NEW JERSEY FARM NEWS

Compulsory School Law.—The new school law provides that children between the ages of 7 and 14 years must attend school regularly, unless their mental or bodily condition is such as to prevent. A child between the ages of 14 and 16 years must attend school, unless he regularly attended school at least 130 days during the preceding year, is able to read intelligently and write legibly simple sentences in the English language, has completed a course of study equal to five yearly grades in reading, writing, spelling, English language and geography; is familiar with the fundamental operations of arithmetic, including simple fractions; has been granted an age and school certificate, and is regularly employed in some useful occupation or service. This last qualification covers farm work, and the lowering of the age limit from 17 years to 14 years enables young people on the farms, who can answer other requirements, to assist in early spring work, pick berries and gather and pack fruit in the fall.

Summer School Plans.—The summer school at the state agricultural college, at New Brunswick, which will be held for the first time this summer from June 30 to August 8, will have a large attendance. It was thought when plans were first made that 200 would be a large registration for the first year, but now it is believed that the enrollment will greatly exceed that number. The courses of study compare favorably with those offered at the best summer schools in the country, and nothing will be overlooked for the comfort and convenience of the students. Certificates granted for the completion of a course or courses will be accepted by any examining board in the state in lieu of an examination.

Field Tests of Corn.—Corn is one of the leading crops of New Jersey, and the total yield is limited by the unwillingness of many farmers to believe that they do not have the best variety of seed corn. John H. Voorhees, of the state department of agricultural extension, has gone into many local corn-growing sections of the state and secured in each section samples of seed corn from 20 or more farmers. He has arranged to have the samples of a single region grown side by side by some farmer of the section. The samples are identified by number, and the product will be exhibited next winter at farmers' institutes, where corn growing will be a leading topic of discussion. Each farmer may thus learn the relative productiveness of the variety he has been growing, and the information gained will help to weed out some of the poorer strains that have been used.

Pear Disease.—A common pear disease, causing a peculiar roughness and black spots on the fruit resembling the scab, was very prevalent in 1912. This disease also attacks the foliage and is carried from year to year on the fallen leaves. It can be controlled by spraying with bordeaux mixture, beginning when the leaves are about two-thirds grown. A second and third treatment at intervals of two weeks will probably prove sufficient, but in wet seasons a fourth and fifth may be necessary.

Forest Fires.—The destructive forest fires which have recently prevailed in the southern and eastern portions of the state have also done much damage to all kinds of game. Many pheasants, partridges and rabbits have been roasted to death, and deer have been driven out of the woods to seek shelter on farm lands and the public roads. The fires covered large areas.

Mosquito Extermination.—The work of exterminating the Jersey "skeeter," which is more firmly linked to the name of the state than the grasshopper with Kansas, is to be prosecuted this summer in several sections of the state with renewed vigor. Encouraged by success in local efforts, the people of the state are awakening to the fact that by co-operation with the authorities, the state, which was the first in the Union to pass a mosquito extermination law, can be rid of this pest and the value of property and comforts of country life will be greatly benefited. The work which was begun on a scientific basis by the late Professor John B. Smith, state entomologist, is to be continued by his successor, Dr. Thomas J. Headlee.

Large Milk Surplus.—The Milk Reporter states that there is a surplus of nearly 10,000 cans of milk piling up each day in New York and other near-by markets. For the first 10 days or so of May a brisk demand was in evidence, and the market was well cleaned up. When the cool wave—unusually cool for May—appeared, the demand fell off with a "thud." As a consequence, quite a surplus is now in sight, probably 10,000 cans a day—which is not seriously large, because in the event of a hot wave, it could all be used. Receipts for April were 1,449,505 cans of milk and 73,315 cans of cream and unsweetened condensed, an increase of 69,295 cans of milk and a decrease of 2,251 cans of cream, as compared with the corresponding month of 1912. Counting the whole as plain milk, it shows a net increase of 58,040 cans, a daily average of a little less than 2,000 cans. Total receipts for the month average daily 48,317 and 2,444; weekly, 338,219 and 18,108 cans, respectively.

Poultry News.—New Jersey will be the scene of the annual convention of the New Jersey branch of the American Poultry Association on June 7. New Jersey is one of the strongest poultry states in the Union, and every county has a poultry association. Considerable interest has been manifested among poultry raisers in and around Newark by talk of a poultry association. The department of poultry husbandry at the state experiment station has offered its services to the poultrymen in organizing a permanent association. From a recent investigation by the department, it has been found that the cities of the state support about as many chickens as do the farming communities.—D. T. H.

NEW YORK LETTER

The State Fair.—Commissioner Huson says that several new features will be added to the horse show at the next state fair. Classes of jumpers and hunters will be shown with riders in uniform. Several of the Virginia hunting clubs are to participate. The dairy department will also have some additional features. All exhibits of butter and cheese will be scored at the fair, and will then be placed in cold storage and kept until the meeting of the state dairymen's convention in Syracuse in December. They will then be scored again and prizes awarded. Ira Sharp, who has been on the fair commission since its organization, has retired from the board, and a dinner was tendered him the other day by his associates.

To Amend Cole Bill.—A project is on foot to amend the commission merchants' law at the coming special session of the legislature. It has to do with the form of bond which the commission men have to put up, and three methods are suggested: Thru the method enacted in the new law; depositing with the comptroller of the state, state bonds equal to $3,000, or depositing with the comptroller a certificate of deposit in a trust company. Some of the New York and Buffalo exchanges are inquiring of the commissioner of agriculture if their members are "commission men" under the provisions of the law. The exhanges will submit a statement to show the methods by which products handled by them are received and disposed of, and on this statement the commissioner will base his decision.

Syracuse Wins.—A short time ago a hearing was granted by the governor on the bill which appropriated $250,000 for the College of Forestry of Syracuse University, and it was violently opposed by friends of Cornell, who believed that the work of forestry could be cared for at the Cornell Agricultural College. But the governor has signed the bill, and the $250,000 will be devoted to the erection of the buildings on the college campus. Governor Sulzer said in a memorandum attached to the bill that results thus far at Syracuse have been most gratifying. There are over 160 students at the College of Forestry now and a ranger school is conducted in the Adirondacks. He wants to see some of the large tracts of waste land now absolutely non-productive planted out to forest trees, and thus restore the lumber and wood pulp industries in the state.

Live Stock Show.—The Greater New York Fair and Exposition will be held on the Empire City Park next August, and one of its features will be a live stock show of cattle, horses, sheep and swine. The leading cattle clubs and associations of breeders are already bestirring themselves to have suitable representations at the show.—New Yorker.

MARYLAND NOTES

Farmers' Day.—Last Friday was farmers' day at Agricultural College and about 300 Maryland farmers inspected the various experiments now being carried on. After inspection and luncheon, President Patterson delivered an address outlining his plans for increasing the usefulness of the college. He declared that Maryland had advantages, from an agricultural standpoint, greater than any other state in the Union. He advocated the training of women for their special life work, which, he said were factors in home building, development of our children, who are to help build a better state and nation. He declared results were accumulating faster at the institution than they are being taken advantage of by farmers. Demonstration tests should be held at practically every crossroads in the state. Congressman Lewis spoke on parcel post. The visiting farmers expressed themselves as highly pleased with the practical work and educational features they saw, and freely admitted they were greatly benefited by the advice and examples they get from the station.

Poor Corn Year.—Carroll County farmers are having trouble with their planted corn. Germination is slow, poor, and in some cases whole fields have been replanted.

Cow-Testing Associations.—A representative from the Bureau of Animal Industry of United States organized a cow-testing association last week in Carroll County. The object is to weed out inferior dairy cows, so the owners can replace them with more profitable ones, or get better milk producers. A result of a similar test recently made in Harford County is interesting. A record kept by 26 farmers who owned 500 cows brought out the information that the best cow yield was 8,603 pounds milk per year, poorest cow in same herd, 1,516 pounds. Expense of feed for best cow, $50.80; the poorest cost $32.31. The profit from the best cow was $143.97, from poorest $8.54. The Harford County Dairy Improvement Association gave out a list of seven dairymen whose cows produced more than 900 pounds of milk in 30 days which ended April 30.

Maryland Grange Meeting.—Pomona Grange, in Cecil County, Md., at its last meeting was addressed by Prof. T. B. Symons. He advised all to have a name for the farm and letterheads with the name on it; if they made a specialty of anything, have that on, too. On account of ravages of Hessian fly on wheat in the county, he declared wheat should not be planted sooner than October 9. The county was especially suitable for apple growing. The address was well received.

Early Vegetables.—Strawberry festivals are now on in all Maryland cities and towns. Local cherries are very scarce and high. The markets are plentifully supplied with strawberries, blackberries and red raspberries, cantaloupes and all kinds of vegetables.—G. O. B.

COUNTY NOTES

Bedford Co., Pa. (S. C.), May 14.—Cold and dry. Horses scarce and high. Grain looking well, but needs warmer weather. Fruit badly frozen; very small percent of summer fruit saved, and winter apples also badly frozen. Codling moth spraying pretty well done.—N. F. Richards.

Potter Co., Pa. (N. C.), May 15.—We are having cold weather. Live stock is looking good; nearly all on grass. Crops are looking good so far. Nearly all oats sowed. Some potatoes planted. Potatoes, 50c bu.; apples, 60c bu.; butter, 30c. Farmers are busy putting their crops out. No corn has been planted.—Louis J. Zundel.

Clarion Co., Pa. (W. C.), May 15.—Had a very dry spell; just having a good rain. Live stock is very scarce and high. Wheat is looking very good. Hay crop also looks well. Oats all sowed. Potatoes and corn mostly all planted.—H. F. Niederiter.

Cattaraugus Co., N. Y. (N. W.), May 18.—Weather fine for putting in crops; dry and cold. Fruit prospects are very poor; two killing frosts since blossoming. New meadows are growing finely. Farm work is fairly well advanced in most localities. Hogs, 8c; eggs, 18c; butter, 32c. Help scarce. Not much call for potatoes. Pastures look fine.—Geo E. Kellogg.

Wicomico Co., Md. (S. E.), May 20.—Cool with but little rain. Live stock quiet; none changing hands. Calves 8c to 10c; chickens, 25c; fowl, 10@15c; eggs, 18c, butter, 30c; potatoes, 50c bu.; new hay, $12 to $14, in field; $20 for old hay; cowpeas, $2.50 to $2.75 and going up. Work well up now. Freeze and heavy frost of May 10-11 caused heavy damage on Peninsula, killing much truck crops. Plowing for late corn.—W. R. Strong.

Greene Co., Pa. (S. W.), May 23.—Cool and rainy. Live stock scarce. Pigs, $8 to $10 pair; horses, $150 to $275. Few cattle and sheep being sold. Hay, $14 to $16 ton; corn, 65c bu.; potatoes, 65c bu.; butter, 30c lb.; eggs, 17c doz. Some corn to be planted, but the most of it is ready for the plow. Wheat is looking good. Very little wool sold; shearing is now in progress.—C. E. Addleman.

Montour Co., Pa. (C.), May 22.—Drouth just broken. Horses high in price. Beef cattle in demand; as high as 7c live weight. Milk cows scarce and high. Bulk of corn crop planted; oats coming up poorly. Wheat, rye and grass good. Work well under way. State highway improvements going on in this section.—Benj L. Diehl.

Frederick Co., Md. (N. C.), May 21.—Moderately cool weather; very dry until 15th; moderate showers since. Live stock on excellent pasture, of mostly white clover. Large crop of weeds. Very little clover for hay. Large stand of timothy. Wheat not so large as promised earlier in season; beginning to head. Some corn to plant. Early planting looking nice. Late plowing breaking up very rough.—H. C. Fawley.

Lycoming Co., Pa. (N. C.), May 21.—Dry, cold May; good rain needed badly. All kinds of live stock in good demand at good prices; butchers buying all kinds of cattle for beef. Veal calves selling on foot at 8c per lb. Spring pigs scarce and high priced; $7 pair, 5 weeks old; some higher, and inferior stock less. Oats coming up nicely. Late potatoes nearly all planted. Some corn to plant yet, owing to dry, hard plowing. Late frosts killed nearly all strawberry blossoms. Looks as if the cherry crop would be small.—Clyde E. Hall.

Fayette Co., Pa. (S. W.), May 20.—Fair and cool. Live stock scarce and in good demand. Wheat, looking fairly good. Heavy frosts killed some of the meadows. Fruit is going to be scarce on account of late frosts. Corn selling at 75c; wheat, $1.05. Farm work in good condition. Corn all planted; some coming up. Potatoes planted. Oats looking fine.—Samuel A. Harris.

Mercer Co., Pa. (N. W.), May 19.—Cool, dry and frosty. Grass and oats growing slowly on account of dry weather. Wheat looks a little yellow after being frosted, but bids fair to be a good crop. Apple leaves frozen stiff when trees were in full bloom, but fruit not all killed. Sheep and cattle in good shape and turned on grass. Young lambs strong and vigorous. Veals, 7c; eggs, 15c; butter, 25c. Farmers busy preparing corn ground; roads in bad condition, owing to little work being done last year under the cash system. The old method made the best roads. Farm hands receiving $25 a month with board and washing. Potatoes being fed to stock.—A. K. DeFrance.

McKean Co., Pa. (N. C.), May 26.—Dry and cold till 21st; light rains for four days. Stock in good condition. Crops are slow on account of cold, frost and dry weather. Much work is required to prepare soils for crops, the soil is so hard. Prices remain good. Many farmers think an abundance of soiling and sowed corn will be needed for fall feeding; hay crop may be light.—M. Ingalsby.

Sullivan County, Pa. (N. C.),—May 24.—Warm and rainy for the last two days. Live stock in fair condition but scarce and high in price. Pigs, per pair, $6. Winter grain looks fair. Oats just nicely up. Some corn planted. Eggs, 17c doz.; butter, 23c lb. Late frost killed about all the small fruit. Was very much in need of rain and warmer weather, which came May 22. Farm work progressing nicely. Conditions look favorable for good crops other than fruit, which is some discouragement to farmers of this locality. Sullivan County Pomona Grange meets at Colby, June 6-7; expect good attendance.—Geo. G. Junk.

Union Co., Pa. (C.), May 28.—Cool and rainy. Cows are very high; common cows selling as high as $80. All stock scarce and high. Crops all look promising. Corn coming fine. Wheat heavy. Grass has a good stand. Butter, 28c; eggs, 18c; milk, $1.40 cwt. Corn all planted. Some ready to cultivate. Road making on the go. Roads are in good condition in general.—H. Lee Herman.

Montgomery Co., Md., May 20.—Very dry until 18th. Seasonable rain now. All live stock selling well. Crops backward. Wheat and grass started beautifully, but cold, dry weather intervened. Corn and garden crops and about 80 percent of fruit injured by untimely frosts. Farm work in pretty good condition. Late potatoes being planted. Rye ready to cut. Crimson clover crop poor.—Prof. S. D. Gray.

CATALOGS RECEIVED

Increase Milk Yield.—The season of flies and annoyance from flies is approaching. It has been demonstrated in practical dairies that flies will decrease the flow of milk from 5 to 20 percent. A splendid preparation for keeping flies off is Cow-Ease, advertised in this issue. It is 100 percent active, is clear, and easily applied and will not gum up the hair. It may be purchased from local dealers, or a liberal trial offer is made to all who write the Carpenter-Morton Co., Boston, Mass., saying that you saw this notice in Pennsylvania Farmer.

Hollow Tile Silos.—The popularity of certain types and makes of hollow tile silos has led to a great increase in the use of this material in silo construction. While there is no doubt of the superior advantages of this material when well made and properly handled, all silo users will want to satisfy themselves of quality before purchasing. An important consideration in every silo is durability, and the wise builder will look well to the source, quality and backing of the material which he selects. The pioneer in tile silo construction is the National Fire Proofing Co., Pittsburgh, Pa. All material sent out is fully tested, backed by years of experience and fully guaranteed. This company is now mailing a new catalog giving full information on the manufacture and use of its tile silos. It is free upon request. Ask for catalog Q.

Kill the Lice and Save Baby Chicks.—Good money is paid for eggs; time, thought and care given to hatching and brooding, and then the lice get the little chicks. If chicks are worth hatching, they are worth saving after being hatched. Lice are the worst pest, because if they do not kill the young chicks outright, they deplete vitality and destroy natural vigor to such an extent that the bird falls an easy victim to disease. A good lice killer, always at hand, is a necessity on all poultry farms. One of the best of these is Avenarius Carbolineum, a thin, free-flowing oil, which may be applied with a brush or sprayer to roosts, nests, walls and runways, and will kill the lice where they are usually found thickest. A complete 40-page bulletin, fully describing the various uses of Avenarius Carbolineum, will be mailed free upon request to Carbolineum Co., 195 Franklin St., New York City.

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The Daughter of David Kerr

By HARRY KING TOOTLE.

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PRECEDING CHAPTERS

The city of Belmont is a typical middle-western village, under the rule of the political "boss," David Kerr. The daughter, Gloria, had spent her girlhood away from home and knew nothing of her father's profession or business affairs. Supposing him to be a wealthy real estate merchant and a leader in Belmont society, she came home to take her place in the best circles of the town. To gratify her wish and continue the deception, David Kerr secretly secured the services of Judge Gilbert to introduce and assist Gloria in establishing herself in society. In return Kerr promised to give the full weight of his political influence to secure the passage of a questionable street railway franchise, the money coming from such influence going to Gilbert. Joe Wright, recent purchaser and editor of the Belmont News, met Gloria while traveling abroad. He had fallen in love with her before he was aware that she is the daughter of David Kerr. Since coming to Belmont he found that it was necessary to oppose the "boss" thru the News, and he took up the fight on the street railway franchise, the very measure which was purchasing the services of Judge Gilbert in Gloria's behalf. The opposition of the News threatened the success of the franchise project and the defeat of the ring in the approaching election. To save the "machine" and his political friends, Kerr decides to purchase the News. He has called Mr. Wright to a conference with this aim in view. Just previous to the meeting he arranged a meeting between Wright and Gloria, which he hoped would help him in gaining control of the paper.

CHAPTER XV (Concluded)

Wright's heart seemed to stop beating as he heard the words that had in them all the finality of a funeral bell.

Kerr had his own reasons for wishing to minimize the matter. Joe Wright he would willingly, gladly have sacrificed, but he did not know how it would react on Gloria. He could find means to make the newspaper man suffer without Gloria being cognizant of the fact.

"That's just western politics." The boss tried to pass it off lightly. "Don't let that bother you."

"He must be punished, I say." Her indignation knew no bounds. "Would you let it go unchallenged that I am the daughter of such a man?"

Kerr was aroused by her spirited manner. It would be necessary, he saw, for him to carry it thru to the end.

"Suppose it was Joe Wright?" he asked.

The occasion was too serious for a smile, but in her heart she laughed away the suggestion. She wanted to show her contempt for a man who thru a newspaper would utter such lies, and she therefore replied:

"That can't be. He isn't that kind of a man. But if he did, I would still say——"

"It is Joe Wright," Kerr roared.

All leaned forward to hear what the girl would say.

"Then I would still say, 'Punish Joe Wright.'"

From Wright's lips there burst forth one word:

"Gloria!"

He came a step toward her, and she turned to him with an assuring smile.

"I don't believe it, Joe." Again she addressed her father and with fine scorn declared, "It's a lie. He couldn't do it. You don't know him as I do." Turning once more to the man she loved, she said proudly, "Say it's a lie, Joe."

The two stood gazing at each other, utterly oblivious of everything in the world. In her eyes there was nothing of doubt. She put into her look all the love and confidence she had promised would always be his. With Wright it was far otherwise. No matter what he said, the fact could not be kept from her. She would investigate. At the top of his editorial page that day were the words, "Owned and published by Joseph Wright." He had just sworn that he would be the champion of the people of Belmont, and here at his first trial he was quailing under the eyes of the woman he loved. With a wrench he tore himself away from his dear desire to save her from pain and answered huskily:

"You don't understand."

"You!" she cried in an agony of despair as she realized he was confessing.

A single movement of his head showed his assent.

"Oh, you coward!" Her disgust was overpowering. The withering contempt she put into her words was equaled only by her look of scorn. He started to speak, but with a gesture of impatience she stopped him.

"All your words are lies, lies, lies! And to think that I promised within this hour to be your wife! You make me hate myself for ever having looked at you. Now I understand why you urged me to leave Belmont." Again he tried to speak. "Not a word. I'll not listen to you. Father, take me home."

She shrank from Wright as if to look at him were dishonor.

All the great love he had for her welled forth in one cry:

"Gloria!"

The girl could not, would not hear. She had but one refuge for her breaking heart. Turning to her father she flung herself into his arms with only a single word: "Father!"

With never a word, with never a look to right or left, the man she had promised to love and who had promised to love her, walked out of the room.

Sobbing as if her heart would break, Gloria rested in her father's arms.

CHAPTER XVI

The unexpected and sensational manner in which the visit of Joe Wright to Judge Gilbert's office was terminated was not without effect upon everyone in the room. Pity for Gloria was the dominating emotion, for everyone present realized her unhappy position. The dramatic revelation of her love affair, the knowledge that she had been sacrificed, stirred every heart. Mrs. Gilbert and Mrs. Hayes, not well versed in politics, harbored no slight resentment against the publisher of the News, since they regarded the article too severe. Were not their husbands interested on the same side as David Kerr? And they were honest men. But their husbands knew the full measure of the bitter cup that both the boss and his daughter, for the father's misdeeds, were called upon to drain.

The first thing to do was to get Gloria away from the office. For several days she had been staying with Mrs. Hayes, and thither she was now taken. By Dr. Hayes's order she was put at once to bed, and under the influence of an opiate, she was soon asleep. Dr. Hayes came downstairs and announced to Kerr, who was savegely pacing back and forth in the drawing-room, that his daughter was suffering from a great nervous shock. He also said that she would probably sleep for several hours.

"It ain't no use for me to stay here then," the boss declared. "If you want me you can git me by telephone at my office or Gilbert's or at the Demmycratic club rooms."

"Even if she asks for you," said the doctor, "I think it best for you to stay away until her nerves are quieter."

As there was nothing further the two men could do, they walked down-town together, leaving Mrs. Hayes to watch over Gloria.

It was nine o'clock before the girl opened her eyes. Dr. Hayes had been home to dinner and then gone out again. His wife was sitting in Gloria's room reading by a light which was carefully shaded so as not to annoy the sleeper. She had turned several pages of her book with the feeling that her patient was now fully awake before she looked up to see if her belief was justified. Gloria was gazing vacantly at the ceiling.

"Is there anything you want, dear?" she asked, going over to the bed.

As Mrs. Hayes looked down at the girl, she seemed to her like a lily that had been beaten by the wind and bruised by the rain and left all forlorn to die. In the girl's face she read the story of the last few hours.

"Is there anything you want, dear?" she repeated.

"Nothing."

Gloria looked up at her with a pathetic little smile of appreciation for her kindness. She threw one hand out on top of the cover, and Mrs. Hayes took it in hers. It was some time, however, before Gloria spoke.

"You heard everything?"

"Yes."

"And you understand?"

"I think I do, Gloria."

"Then there isn't anything much for me to tell you."

For a long time she preserved silence, Mrs. Hayes holding her hand but saying nothing.

"It isn't as if he had died," she began slowly, almost as if just talking aloud to herself. "I think I could have stood that. In time everything would have come to be just a beautiful dream, Paris and Belmont and all. In my heart I could always have cherished the memory of a strong, brave man, the man I thought he was. You know, Mrs. Hayes, he seemed to me to be very much like my father."

For a time she thought it over to herself. Mrs. Hayes did not press her, and continued to show her sympathy by holding her hand.

"Yes, it would have been a lot better had he died before I ever knew. What would have been a beautiful dream is now only a hideous nightmare. And I believed in him so! You who have seen just a little of him can't know how I loved him. It wasn't exactly love when we were abroad in the same party. Yes, it was; only I didn't know it. It wasn't until he had gone away and no word came from him that I knew how much he was to me. And then I met him here. Heaven seemed to open for me that night.

She turned her head for a minute, and the tears began to flow. When she began again her eyes were still blurred with tears.

"I can tell you, and I could tell Mrs. Gilbert, that it's going to hurt me, a lot. It's going to hurt to think how I was deceived. I thought I was building my house of life upon a rock, and when the rains came I awoke to find the foundation was only shifting sand."

"We all have our troubles, dear," Mrs. Hayes told her. "Yours may seem hard to bear, but you must know that life can't all be painted in rainbow hues. I've taken you with me into Belmont's unhappiest homes, and what you have seen should teach you to bear your own trials with resignation and fortitude as a Christian should. Perhaps it's not well to think how much better off we are than other people, but when we do think of it we see that God has shown us abundant kindness compared to that given to others, and then our crosses are lighter."

"But I loved him so!" cried Gloria, burying her face in the pillow.

Mrs. Hayes could only clasp the girl's hand. The attempt to comfort her was unprofitable. Her grief was too new, her wounds too fresh for comfort. Longer and longer grew the intervals between her sobs. Finally Mrs. Hayes thought she had fallen asleep, but Gloria was only thinking. It came to her that she was still young. Love would never be hers, she was sure of that; but long years stretched out before her. She couldn't be a coward and shirk those years. Once she had built her house of love and life upon the quaking sands, now she would build her house of life upon the firm rock of service. In ministering to the unfortunate, she might find surcease for her own sorrow.

"Mrs. Hayes?"

"What, Gloria?"

"I'm not going to let anything that happened today spoil my life."

"Of course not, dear. Rain today means sunshine tomorrow for us."

"I don't know about the sunshine, but I do know that I want to go along just as if nothing had happened. Tomorrow let's do just what we planned to do, and the next day and the next. I want to keep busy. Can't you understand?"

Mrs. Hayes did understand, and admired the girl for her bravery.

"All right, Gloria. I think that is best. We weren't put in this world to have only the good things of life and shirk the bad things. We must take them as they come, the bad with the good. You are doing just what Mr. Wright would have you do if he were the man you thought him and he had died before your wedding day. Perhaps all will come out as you once had planned."

The daughter of David Kerr shook her head.

"That can never be."

She said no more, and after a time seemed to fall asleep. Mrs. Hayes unclasped her hand, turned out the light, and left the room.

Thru the windows streamed the moonlight. The girl, assured that she was alone, turned on her side and watched the beams creep slowly across the room.

What a flood of memories the moonlight brought!

Those first nights on shipboard had been under a silver moon that shed its rays upon a silver sea. Those nights in France a month later had been under a moon no less gorgeous. Then had come the Rhine and there,too, had been moonlight.

She tried to think of him as he had been and not as he was. In him she had found every good trait a man should have. She was chagrined to think how easily it now appeared she had been won. How much she would have been spared, she pondered, had she not been so eager for his love to show him so soon that she cared for him.

Every familiar gesture which was at all a part of him she knew would call him to mind when another man might make it. The way he held his cigar when he smoked, the odd manner in which he would lock his hands together whenever a knotty problem bothered him, these little things and a host of others would come back to plague her.

All the dear, dead past crowded into her mind. It was not of the man whom that afternoon she had spurned that she thought, but of the man whom in her heart she cherished—her ideal.

With a mighty sob she began again to weep. There had come to her the realization that love was done. Far across the room the moonbeams crept before Gloria fell into a fitful slumber.

CHAPTER XVII

"I've forgotten what we'd planned for this afternoon," Gloria remarked to Mrs. Hayes the morning after the stormy scene in Judge Gilbert's office. Yesterday was carefully ignored by both as they talked.

"This was the day Mrs. Wallace asked us to help her at the mission," Mrs. Hayes explained.

She did not say further that she had telephoned earlier in the morning and had Mrs. Wallace, the matron, make plans whereby the whole afternoon would be taken up. She believed Gloria's peace of mind would be all the greater were she engaged in some work which would make her feel that thru her the pain of the sufferer was alleviated and the bruised heart of the unhappy bound up.

It was just two o'clock when they reached the mission. They had not been there long before Mrs. Wallace suggested that they call on a poor girl who was ill in a room over Mike Noonan's saloon. The sick woman was known to her, but she told nothing of her story. It wasn't much different from any one of half a hundred she might have told.

The two women felt not the slightest fear in walking thru such a rough quarter of the town. Mrs. Hayes was an experienced settlement worker, and knew many of the persons whom they passed. They for their part knew her and respected her for the kindly charity she dispensed so unostentatiously. As for Gloria, she could fear nothing since she was almost in total ignorance of what dangers might beset their path. Then, too, she was busy with her own thoughts.

Mrs. Hayes had been told in what room the sick woman lay, and without a word to anyone, in fact, they saw no one, they went in the door on the side street and climbed the dark, uncarpeted stairs to the third floor. At a door just at the foot of the flight of steps which led to the fourth story, Mrs. Hayes knocked gently. There was no answer. She decided that if there was no response to the next knock she would open the door to see if the girl were asleep. A second and louder knock, however, aroused her and she called to them to enter.

Gloria and Mrs. Hayes walked into the room, and as the latter went to the bedside to explain how they happened to call, the daughter of David Kerr stood stock still and gazed about her with undisguised curiosity.

The occupant of the room, a frail little creature with uncertain, golden hair, was known to her companions as Little Ella. Upon the blotter at the police station she was always booked as Luella Windermere. She had found the name in a novel and, liking it, had taken it for her own. In the unkindly daylight, without the paint that masked the cheek that once had bloomed a healthier hue, the pallor of her face was heightened by the dark circles under her eyes. Yet the ravages of a life too harsh for one so weak had not been so great as to blot entirely from her face traces of a simpering sweetness.

If Little Ella's room could be summed up in one word, that word would be—sham. It was not a poverty that honestly confessed itself to be such, that room. Instead it was a poverty that slunk away into corners and hid behind the rankest imitations of better things. Everything seemed to have been purchased at the cheapest booths at Vanity Fair. There were few things of substance, but many things of vain and empty show. Had Gloria been more skilled in reading the world aright, every bauble, every useless ornament would have preached a sermon. As it was, there was for her in large part only the interest of novelty.

To the right of Gloria were two windows looking out over the roofs of neighboring houses. Between them was a scarred maple dresser. It was littered among other things with postcard photographs, business cards, a calendar with a picture in many colors and a bottle of Florida water. Directly in front of her was the sick girl's bed, a cheap iron affair with massive tarnished brass trimmings. Beyond it was a frail-looking trunk painted in imitation of leather. The only things which boldly confessed themselves to be just as represented were two wooden kitchen chairs.

Looking close beside her, Gloria saw a battered maple washstand and beyond it a door which led into a closet under the stairs. She glanced curiously at the walls, which boasted some cheap prints, most of them showing by the advertising matter upon them from which whisky house they had emanated. Some of the girl's waists and skirts hung upon nails, but the clothes which she had taken off the night before on retiring were upon a chair beside her trunk.

"I heard you were sick," Mrs. Hayes said sympathetically, "and I want to know if I can do anything to help you."

Little Ella viewed them with cold antagonism. They were not of her world and she both feared and hated them.

"Naw," she growled. Then against her real wishes something out of her old life made her add grudgingly, "Much obliged."

Mrs. Hayes had worked too long among such people not to understand, and she ignored the girl's unfriendly manner by asking, "How do you feel today?"

"Rotten."

"No wonder; it's so close in here. I think it would be better for you if you'd let me open a window. It's mild out. May I?"

"Go as fer as you like; I don't feel like fightin'."

A nod from Mrs. Hayes sent Gloria to open a window.

"There now," exclaimed the younger visitor. "You'll feel better."

"Gloria," Mrs. Hayes asked, so the sick woman could not hear, "do you mind staying with her while I go to the mission for a few minutes? I want Mrs. Wallace to come over if she can; and the doctor, too, as soon as I can find him."

"Certainly, I'll stay," was the prompt response. "What's the matter with her?"

"I can't say until I see the doctor because I'm not sure. I want Dr. Hayes to see her. If I can't get him I'll get Dr. Norton. You're not afraid to stay?"

Gloria smiled. What was there to fear? The girl surely could not become so ill in the short space of time Mrs. Hayes should be away as to render her inexperienced nurse absolutely helpless.

"Of course I'm not afraid," she replied. Then impulsively, "Besides I want to do some good in the world. I've been too selfish."

"No, dear, not that," her companion gently remonstrated. "Thoughtless, perhaps, because you didn't know, but not selfish." Then she turned to Little Ella and said in the same quiet tone, "I think you'd be happier where there'd be someone to take care of you."

"I'm not sick, I'm just tired."

The ignorant fear sickness and disguise it as long as they can, shirking the fight and thereby making it all the harder. Understanding this, Mrs. Hayes answered lightly:

"If that's the case, I hope you'll entertain my friend for me until I return. She's interested in the work at the mission."

"You're on," Little Ella replied with an air of resignation as Mrs. Hayes left the room. She rolled over on her side and closed her eyes. Already she began to feel bored.

Altho Gloria had professed that she had no fear about being left with the sick woman, when she said it she had in mind only a fear of being alone in such a dismal lodging house and fear that she might be called upon to act as doctor and trained nurse, both, were her patient to take a turn for the worse. Now, however, a new thought came to her. How was she to act? What was she to do to amuse her? She felt instinctively the antipathy she had aroused. She cowered like a lamb before this young she-wolf of the city. She was alone, defenseless, with this creature that had so far reverted to type that she might rend and tear. Even in a battle of wits, and that was all there would be if the girl did not ignore her entirely, Gloria felt herself no match for this brazen child of misfortune. Her comparisons were physical, but it was not a physical fear she felt. Sheltered inexperience was pitted against the most cruel experience society could ever devise or tolerate.

Gloria was mistaken in thinking that Little Ella slept. After Mrs. Hayes had left her she walked quietly back to a chair by the bedside. On it lay a cheap novel with which the sick woman had been beguiling the time. She picked it up and was turning the pages casually when a feeling stole over her that she was being observed. Putting aside the book, she found Little Ella gazing at her stonily.

"Say, what'd you come here for?"

"Why," she answered in surprise, "I wanted to help you."

A sneer curled the sick woman's lip, a cynical sneer of disbelief.

"Help me! To what? I ain't ever saw you down here before. Come on, what brought you?"

"I came with Mrs. Hayes," was all that Gloria could find to answer.

"The woman what just went out?"

"Yes."

Feeling that she must do something to end this catechism, Gloria happened to glance at the book she held in her hand, and this led her to ask, "Wouldn't you like me to read to you?"

"Naw. I can read fer myself."

"Perhaps there is something else I might do. What do you say, I might write a letter for you?"

"A letter? Who to?"

"Isn't there someone who ought to know you are sick?"

"Who'd want to hear from me?" the woman replied sullenly. "I ain't the belle o' the village any more."

"Haven't you a mother?"

"She's dead."

"A father, then? Isn't there someone watching for you, hoping to see you come down the quiet little street?"

Here was an attempt to awaken a sentiment for the past which met with no success. Little Ella replied roughly:

"They're watching at his house all right—all right—him and that pasty face wife of his—so they can run out and unchain the dog. Then they'd gather in the parlor an' say prayers fer the dead—that's me."

"What could you have done to have your family treat you so?" Gloria asked. "What could you do to be estranged from your father, of all persons?"

This was something Gloria could not understand. Once she would not have understood a lack of love where two had lived together continuously. Now she could waive that point, but the estrangement was beyond her.

Little Ella considered the question gravely. What was she to tell this inquisitive girl who was not asking questions just for the fun of prying into someone else's life? Somehow or other Gloria began to appeal to her. She had decided that the visitor's ignorance was real, not feigned. In reply to the question as to why she was not received at home, she turned her big dark eyes, lusterless now, upon Gloria, and said quietly:

"I loved."

"Oh!" exclaimed Gloria, and a sudden pain shot thru her.

"Oh, what?"

"Was it really love?"

The question came forth without a thought of how it might affect her hearer. It did, indeed, provoke Little Ella, taking away that kindly feeling which had begun to kindle in her heart because of Gloria's ignorance.

"Didn't I say I loved?" she demanded harshly. "What do you know of love? You can't come down here and teach me anything. Pooh! I don't believe you know what real love is. Was you ever in love?"

Ordinarily to a girl reared as Gloria had been no more serious affront could have been offered her. It was like meddling with her private affairs which was unpardonable.

"Was you?"

Little Ella asked the question again with the sharpness gained from listening to the city attorney cross-examine witnesses in police court. Seeing that she was almost compelled to say "yes" or "no," Gloria replied defiantly:

"Yes, I was."

"An' yer not married?"

"No."

"Goin' to be?"

A pause.

"No."

"Say, yer overlookin' a bet. What's the matter?"

Gloria felt herself fascinated by this slight little woman who in her excitement had propped herself up in bed on a thin, trembling arm. The light had come back into her eyes as she pursued her inquiries and they shone like two burning coals.

"He didn't really love me," Gloria said more to herself than to the girl.

"Did he tell you so? How do you know?" There was no answer. "Huh! You asked me questions so I thought I'd ask you some. Did he know you loved 'im?"

"He did, but —my father discovered that he was unworthy."

This information seemed to Little Ella to be a bond of fellowship. She fell back on the bed to rest, and remarked philisophically:

"Humph! My ol' man thought the feller I loved was no good, too. Guess we've had pretty hard times, eh?" No reply. "What d' you think?"

"I—I—he was unworthy."

It was now Gloria who spoke listlessly.

"So you had to choose between 'im an' yer father?"

"Was there any choice? I gave him up."

(To be continued.)

Alfalfa Campaigns.—Prof. P. G. Holden, of the Extension Department of the International Harvester Co., is conducting a series of automobile alfalfa campaigns in various counties of the middle western states. An automobile "train" was recently run in Kent County, Mich., where about 10,000 acres were pledged to alfalfa growing within the next two years. Similar campaigns are to be conducted in counties of Ohio, Indiana and Illinois within the next few months.

Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., June 2, 1913.

The butter market ruled firm all during the week. Receipts were generally of good stock and were readily absorbed. Good eggs are in demand. The market is somewhat stronger, and only the poor grades are being sold at a sacrifice. Dressed poultry was very dull and prices remained at about last week's figures. Vegetables sold slowly at steady prices.

Butter.—Western creamery, 30c; extras, 28c; firsts to seconds, 26@27c; special prints 34@37c; near-by prints, 31c.

Cheese.—New York full cream, 17@17¼c; skims, 8¾@11c, according to quality.

Eggs.—Candled, 24@26c doz.; extras, 23c. Current receipts at $6.30 per standard case.

Poultry.—Fowls, 15½@16c; old roosters, 12c; spring chickens, 29@31c; ducks, 13@14c; pigeons, 23@25c.

Dressed Poultry.—Western fowls, 18@19c; roosters, 14½c; chickens, 18@19c; squabs, $3.50@4.50 doz.

Vegetables.—White potatoes, choice, 85@95c bu. Onions, 90c@$1.10 bag. Cabbage, $1.25@1.75 crate. Lettuce, $1.25@2.00 basket. Cucumbers, $1.50@2.25 basket. Celery, $1.00@1.50 bch. Spinach, $1.25@2.00 bbl. Kale, 25@50c bbl. Egg plant, $1.75@2.25 box. String beans, $1.50@2.00 bu. Peas, $1.50@2.00 basket. Peppers, $1.50@2.50 carrier. Tomatoes, $1.50@2.50 carrier. Watercress, $1.00@1.50 100 bchs. Asparagus, 6@15c bch. Beets, $3.00@4.00 per 100 bchs.

Fruit.—Apples, choice varieties, 25@75c hamper; $3.00@5.00 bbl. Cranberries, $1.25@2.00 crate. Strawberries, 5@9c qt.

Hay and Grain.—No. 1 timothy, new, $17.00@17.50; No. 2, $14.50@15.50; No. 3 do., $12.00@13.00. No grade, $8.00@10.00. Clover mixed, No. 1, $13.00@13.50; No. 2 do., $11.00@12.00. No. 1 tangled rye straw, $14.50@15.00; No. 1 wheat straw, $9.50@10.50; No. 1 oat straw, $10.50@11.00. New shelled corn, No. 2 yellow, 67@67½c; No. 3 yellow, 65½@66c. Winter milling wheat, $1.08@1.10; No. 1 northern, $1.02½@1.03½. No. 2 white oats, 46@46½c. Standard white, 45½@46c; No. 3 white, 44½@45c.

Hides and Skins.—Steers, abattoir, 15@16c; do. country, 13½@14c. Cows, abattoir, 14@14½c; do. country, 12½c. Bulls, abattoir, 12¾c; do. country, 11¼c. Calf skins, Nos. 5 to 12 and up, $1.35@2.45; do. green, 13@14c.

Seeds.—Timothy, $3.15@3.25 bu.; clover, white, $25; do. crimson, $6.25; do. mammoth, $14.50; do. sweet, $13.00; do. alsike, $13.25; red top, per bu., $13.50; alfalfa, $7.00@10.00; Canada field peas, $2.35; vetch, $8.50; rye, winter, $1.37; spring, $2.25; soy beans, $3.25; barley, $2.50; buckwheat, $1.50; cowpeas, $3.00@3.25 millet, $1.90@2.75; oats, $1.25.

Coffee.—Rio, 7s, 11⅜c; Santos, 4s, 13⅝c. Mild Coffee—Cordova, 14½@17c.

Provisions.—City beef, smoked and air-dried, 24@25c. Beef hams, 33@34c. Pork, family, $21.00@22.00 bbl. Hams, cured, 15@16c; skinned, 15¼@16¼c; smoked, 18@20c. Other hams, smoked, city cured as to brand, 17@19c. Picnic shoulders, 10¾@11⅜c; do. smoked, 13@13½c. Bellies in pickle, 15½@16¾c. Breakfast bacon as to quality, 19@23c. Lard, refined, 11¾@12½c; do. in tubs, 11½@12c; do. kettle rendered, 11¾@12c. Tallow, prime city, 6¾c; do. country, 6¾c; do. dark, 5¾c; do. cakes, 7¼c.

Sugar.—Cut loaf, $5.05 cwt.; cubes, $4.50, powdered, $4.35; granulated, $4.25; standard granulated, $4.30; crystal A, $4.25.

Four.—For 196 lbs., in wood, winter clear, new, $4.15@4.40; do. straight, new, $4.50@4.65; favorite brands, $5.25@5.60. Rye flour, Penna., $3.50@3.75.

NEW YORK PRODUCE

New York City, June 2, 1913.

Under a greater demand for creamery grades of butter, prices have advanced ½c. The poorer grades, however, do not show this increase. Eggs were more plentiful last week, and under a steady demand values declined a shade. This condition is expected to be only temporary. Dressed poultry is weak. Sales were slow and without interest. Vegetables were mainly steady. Parsley, cauliflower, cucumbers and onions are in stronger demand.

Butter.—Creamery firsts to extras, 27½@28½c; thirds to seconds, 26@27c; factory, 23@24½c; state dairy, 24@27½c; packing stock, 20@21c; process, 25@26½c.

Cheese.—Whole milk, specials, 13@13¼c; do. common to fancy, 12@13c; skims, 5@10c.

Eggs.—State and near-by, 22@25c; fresh gathered, 14@23c; mixed, 20@22c.

Dressed Poultry.—Turkeys, dry, 18@19c; chickens, Penna., 28@33c; fowls, 14@18½c; old roosters, 13@13½c; ducks, 15@20c; roasters, 19@22c.

Live Poultry.—Fowls, 18c; chickens, 18c; old roosters, 12½c.

Grain.—Easy. Wheat, No. 2 red, nominal No. 1 Northern, $1.01. Corn, 65¾c. Oats, standard white, 46½c.

Vegetables.—Potatoes, state, $2.40@2.60 per 168 lb. bag. Cabbage, $1.00@1.50 crate. Green beans, $1.00@2.00 basket. Carrots, 75c@$1.00 bag. Cucumbers, 30@90c doz. Lettuce, $1.00@2.00 bbl. Squash, $1.50@2.00 basket. Celery, $1.50@2.00 case. Horseradish, $1.00@3.00 cwt. Parsnips, 50@75c bbl. Turnips, 50c@$1.00. Watercress, $1.00@1.50 per 100 bunches.

Fruit.—Apples, $1.75@4.00 bbl., according to variety. Strawberries, 5@13c qt.

BALTIMORE PRODUCE

Baltimore, Md., June 2, 1913.

The butter market remained about as last week. There was enough demand to absorb the choice offerings and prices were steady. There was a good demand for eggs. Prices on fresh stock advanced a shade under the firmer tone of the market. Live poultry was steady. The poorer grades find slow sale, since there is enough fresh stock on the market to supply the demand. Vegetables were steady.

Butter.—Creamery, fancy, 29c; do., choice, 27@28c, prints and blocks, 28@30c; Maryland and Penna. rolls, 22c; prints, 29@39c. Process, 25@27c.

Cheese.—Flat, 17½c; Daisy, 18@18½c.

Eggs.—Md. and Penna., firsts, 20c; western, 20c; southern, 19c.

Live Poultry.—Hens, 18c; chickens, 17½@18c; old roosters, 11c. Ducks, 13@15c. Geese, 14@15c. Guinea fowls, 20@30c.

Dressed Poultry.—Turkeys, 24@25c; chickens, 20@21c; roosters, 11@12c; ducks, 20@22c; geese, 11@17c.

Vegetables.—Potatoes, white, 65@75c bu. Sweets, $3.00@4.00 bbl. Cabbage, $1.00@1.25 crate. Onions, 80@90c crate. Lettuce, 25c@$1.10 bu. Egg plant, $1.25@2.25 crate. Peppers, $1.50@2.00 crate. Squash, 50c@$1 crate. Spinach, 30@60c box. Cucumbers, 75c@$2 basket. Beans, green, $1.00@1.25 basket. Celery, $2.50@3.75 crate. Turnips, 10@15c box. Cauliflower, $2.50@2.75 bbl. Horseradish, $1.50@1.65 box. Beets, 2@3c. Asparagus, $1.50@2.25 doz.

Fruit.—Apples, new, $2.00@3.50 bbl.; 50c@$1.00 bu. Strawberries, 3@7c qt.

Grain.—Wheat.—No. 2 red western, $1.08¼; spot, $1.08. Corn, spot, 61c; contract, 61c. Oats, No. 2 white, 46@46½c; standard white, 45½c; No. 3 white, 44½@44¾c. Rye, 60@65c.

Hay and Straw.—No. 1 timothy, $18.00@18.50. No. 2 timothy, $16.00@16.50. No. 3 do., $13.50@15.00. Choice mixed, $14.50@15.00. No. 1 clover, $11.50@12.00. No. 2 do., $9.00@10.00. No. 1 tangled rye straw, $11.00@12.00. No. 1 oat straw, $9.00@10.00. No. 1 wheat straw, $8.00.

Millfeed.—Spring bran, $21.50@22.00; Middlings, flour to white, $26.00@28.00; western middlings, $22.00@22.50; city mills mids., $23.50@24.00.

WASHINGTON PRODUCE

Washington, D. C., June 2, 1913.

Eggs.—Near-by, fresh, per dozen, 21c; southern, per doz., 20c.

Cheese.—New York, new, per pound, 16½c; flat, 16½c.

Butter.—Best prints, per pound, 31c; tub, 30c; process, 27c; undergrades, 25c.

Live Poultry.—Hens, per lb., 16@17c; roosters, 10c; springers, 28@30c; turkeys, 16@17c; geese, live, 10@12c; ducks, 15@16c.

Vegetables.—Potatoes, bbl., $2.00@2.50; 80c@$1.00 bu. Onions, $1.00@1.25 crate. Lettuce, per basket, 50c@$2.00. Beans, 75c@$1.50 basket. Peppers, per crate, 75c@$1.50. Egg plants, per box, $1.50@3.00. Squash, per bbl., 50c@$1.00. Beets, $2.00@3.00 per 100 bchs. Mushrooms, per lb., 20@40c. Carrots, 2@4c bch. Cabbage, $1.00@1.25 crate. Radishes, 50c@$1 per 100. Cauliflower, $1.00@2.00 crate. Asparagus, $1.25@2.50 doz. Apples, $1.50@4.50 bbl. Strawberries, 5@10c box.

BUFFALO PRODUCE

Buffalo, N. Y., June 2, 1913.

Butter.—Firm. Creamery, choice, 27c; choice dairy, 26@27c.

Cheese.—Steady. Fancy, 17½@18c; good, 16@16½c.

Eggs.—Firm State, fresh, 22@23c; western, 20@21c; mixed, 21@22c.

Dressed Poultry.—Active. Turkeys, per lb., 22@24c; fowls, fancy, 17@20c; chickens, 16@20c; old roosters, 14@15c; ducks, 21@24c; geese, 17@18c.

Live Poultry.—Steady. Chickens, 18c; ducks, 21@22c; geese, 15@17c; turkeys, 22@23c; old rosters, 13@14c.

Vegetables.—Potatoes, firm. Home-grown, 90c@$1.00 bu. Cabbage, $2.00@2.75 crate. Onions, 40@80c sack. Beans, green, $2.25@2.50 hamp. Turnips, $1.00@1.25 bbl. Celery, 80c@$1.00 doz. Spinach, 40@50c hamp.

Beans.—Quiet, steady. Marrow, fancy, $3.35@3.40; medium, $2.30@2.50; red kidneys, $2.00@2.25.

Fruits.—Apples, $3.50@4.00 bbl.; 50@75c bu.

Honey.—Firm. No. 1 fancy, 16@17c; No. 2 new, 13@15c; dark, 12c.

Hay.—Firm. Timothy, choice on track, $17.00@18.00; No. 2 do., $16.00@17.00; No. 3, $14.00@15.50; light mixed, No. 1, $13.00@14.00; rye straw, $10.00; oat and wheat straw, $9.00@9.50.

Feed.—Steady. Spring bran, $20.50 ton. Standard mids., $21.50. Corn meal, $25.50. Gluten, $23.50. Hominy, $25.00. Oilmeal, $27.50. Cottonseed meal, $32.00.

YORK PRODUCE MARKET

York, Pa., June 2, 1913.

Last week's markets were attended by the largest number of people that has ever been known. On Friday and Saturday the large buildings were completely packed. Buying was brisk. The special feature was the display of York County strawberries, the finest known so early in the season. Those that were left by the frost are unusually fine. Indications are that the season will be early and short. The berries moved rapidly at 15, 18 and 20 cents per box.

Butter.—Country, 30@34c; separator, 32@35c. Milk, 5c per qt.

Eggs.—20@21c doz.

Poultry.—Hens, 15c lb.; springers, 27c lb. Dressed poultry, 45@90c each.

Vegetables.—Potatoes, new, 20@30c ½ peck; old, 50@60c bu ; cabbage, 2@6c each; lettuce, 3@8c; beets, 5c bch; radishes, 3@5c; onions, 2@4c bch.; lima beans, 12@14c qt.; soup beans, 7@10c qt.; sweet potatoes, 12@15c per ½ pk.; parsnips, 10c per ½ pk.; sauer kraut, 5@7c qt.; lard, 12@15c lb.; celery, 3@10c; rhubarb, 5c bunch; asparagus, 5@9c bunch; string beans, 30c per ½ pk.; peas, 25@30c per ½ pk.

Fruit.—Apples, 15@18c a half peck; strawberries, 12@20c box.

Retail Grain Market.—Wheat, $1.17; corn, 75c; oats, 50c; bran, $1.15 a cwt; rye, 65c; middlings, $1.40 a cwt.

Wholesale Grain Market.—Wheat, $1.07; corn, 63c; oats, 40c; rye, 55c.

WILMINGTON PRODUCE

Wilmington, Del., June 2, 1913.

Fruits.—Apples, $1.00 basket; $5.00@5.50 bbl. Strawberries, 5@10c box.

Vegetables.—Potatoes, $1.00 bu.; new, $4.50@5.00 bbl. Cabbage, $1.50 crate; 25c bas. Onions, 45c bas. Spinach, $1.50 bbl. Sweet potatoes, 75c basket; $2.50 bbl. Kale, $1.25 bbl. Lettuce, $2.00 basket. Asparagus, $2.00@2.50 doz.

Poultry.—Chickens, live, 18@19c; do., dressed, 20@22c. Ducks, 13@14c lb.; dressed, 20c.

Eggs.—19@21c.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., June 2, 1913.

The cattle market during the past week was steady on the top grades and weak on poorer stock.

	Beef Cattle	Sheep and Lambs	Hogs
Total for week	3,844	11,646	4,705
Previous week	2,938	11,344	4,570

Best steers	$8.40@8.50
Choice steers	8.30@8.40
Good	8.00@8.25
Medium steers	7.75@8.00
Common steers	7.25@7.50
Bulls	6.00@6.65
Fat cows	6.00@6.65
Thin cows	3.00@3.65
Milk cows	40.00@65.00

Veal calves firm.

Best calves	$10.50@11.00
Good to choice do.	10.00@10.50
Medium	7.00@8.00
Common do.	6.50@7.00
Thin do.	5.00@8.00

Sheep and lambs are steady.

Clipped sheep	$5.75@6.00
Choice do	5.50@5.75
Good wethers	5.00@5.50
Common to medium	3.00@5.00
Ewes, fat	5.00@5.50
Extra lambs	9.50@9.75
Good to choice do.	9.00@9.50
Common to medium	7.75@9.00
Early spring	8.00@9.75

The hog market continued steady thruout the week at $12.00@12.25.

City Dressed Stock.—Choice classes of dressed meats are steady. Trade is normal. Steers, 11½@13c; heifers, 10@12½c; cows, 8@11½c. Veal calves, 14@16c; country dressed calves, 14@15c; extra do., 15½c. Sheep, 10@12c; extra wethers, 13c. Spring lambs, 15@18c. Hogs, 12¼@12½c.

PITTSBURGH LIVE STOCK

Pittsburgh, Pa., June 2, 1913.

With a light supply last week the market ruled active and strong and about 10 cents higher on fat cattle of tidy and medium grades. Heavy cattle were only steady. All grades of fat cows and heifers were steady to strong. Cattle receipts today were 65 carloads. With a fair demand, heavy cattle sold barely steady, but others were active and higher.

Good to choice	$8.30@8.55
Good, 1300 to 1400 lb.	8.15@8.30
Medium to good, 1200-1300 lb.	8.10@8.20
Tidy, 1050-1150 lb.	8.00@8.15
Fair to medium, 900-1100 lb.	7.75@8.00
Common to good fat oxen	5.00@7.00
Common, 700-900 lb.	6.00@7.25
Common to good fat bulls	5.00@7.75
Common to good fat cows	4.75@7.25
Heifers, 700 to 900 lb.	5.50@8.00
Bologna cows	4.00@4.40
Fresh cows and springers	20.00@80.00

Veal calves were in liberal supply last week and closed 25 cents per cwt. higher. Receipts today were 600 head. There was a good demand and a further advance of 50 cents per cwt.

Heavy and thin calves	$4.50@7.00
Veal calves	9.00@11.00

The supply of hogs was liberal thruout the week and prices closed slightly higher than the Monday basis. Today's hog receipts were 55 double-deck loads. The market ruled steady.

Prime heavy	$8.85@
Prime medium weights	8.95@
Heavy mixed	8.90@
Best heavy Yorkers	8.95@
Light Yorkers	8.90@
Pigs as to quality	8.95@9.00
Common to good roughs	7.25@7.80
Stags	6.00@7.50

Sheep and lambs were in fair supply thruout the week and prices ruled steady on all best grades of sheep. Choice lambs were about 10 cents lower. The medium grades of sheep and lambs also ruled lower. Spring lambs were in liberal supply, and at the close were about $1 per cwt. lower. Today's sheep receipts were 35 double-deck loads. With only a fair demand the market ruled slow and 15 to 25 cents lower on all grades. There was a fair supply of spring lambs and a fair demand at lower prices.

Prime wethers	$5.25@5.50
Good mixed	5.20@5.40
Fair mixed ewes and wethers	4.50@5.00
Culls and commons	2.50@4.00
Spring lambs	6.00@8.50
Culls to choice lambs	4.00@7.25

BUFFALO LIVE STOCK

Buffalo, N. Y., June 2, 1913.

There was a slow trade in cattle during all of last week. On the close the demand was fair and prices firm. Today's cattle receipts were 140 carloads. The market ruled steady to 10 cents per cwt. lower.

Choice heavy steers	$8.25@8.50
Medium	7.25@8.00
Yearlings	7.00@7.75
Plain heavy	7.75@8.00
Handy butchers	6.75@8.25
Good to choice fat cows	6.25@7.50
Good to choice heifers	7.25@8.00
Butcher bulls	7.25@7.75
Feeders	6.00@7.70
Stockers	4.65@6.25
Cows and springers	30.00@85.00

The good calf trade on Monday kept the market in fair position for the balance of the week. The early part of the week the market was firm at $10.50@11.00. On the close the supply was liberal, the demand good but the basis 25 cents lower. Today's calf receipts were 1,500 head.

Choice veals	$10.25@10.50
Light and thin	4.00@6.50

There was a fair demand for sheep and lambs after Monday, with a short supply, particularly the first of the week. There was a fair supply with some hold-overs at the close. Trade was slow and 60 cents lower. Today's sheep and lamb receipts totalled 40 carloads. The market ruled lower.

Choice lambs	$7.00@7.25
Poorer grades	6.00@6.50
Yearlings	6.00@6.25
Wethers	5.50@5.75
Ewes	5.00@5.25
Sheep	5.25@5.50

The hog market was fairly active during all of last week. There were some advances early in the week, with best grades selling at $9.10@9.20. At the close the basis was 10 cents higher, with a fair supply for the end of the week. Local packers took the bulk of heavy hogs. Today's hog receipts were 100 carloads.

Heavies	$9.00@
Mixed and medium	9.00@
Yorkers	9.00@
Light Yorkers	9.00@
Pigs	9.00@
Roughs	7.50@8.00
Stags	6.50@7.25

NEW YORK LIVE STOCK

New York City, June 2, 1913.

Cattle receipts for the week were 2,954 head. The market is lower.

Steers	$5.85@8.35
Bulls	6.00@7.50
Cows	3.50@6.50

Dressed beef steady. Native sides, 11@13c.

Calf receipts were 6,780 head. The market is 25 cents lower.

Choice veals	$8.50@11.25
Good veals	6.00@7.25
Culls	6.50@8.00

Dressed calves are steady.

City-dressed veals	14@17c
Country-dressed veals	13@16c

Sheep and lamb receipts were 18,310 head. Sheep are steady and lambs lower.

Clipped sheep	$3.75@5.25
Wethers	5.50@5.75
Culls	2.50@3.50
Spring lambs	7.50@9.00

Hog receipts were 9,162 head. The market is steady at $9.00@9.10.

BALTIMORE LIVE STOCK

Baltimore, Md., June 2, 1913.

Beef receipts for the week were 1,541 head. The market is steady.

Steers	$6.75@8.15
Heifers	5.75@7.25
Cows	3.25@6.00
Bulls	6.35@7.00
Fresh cows	27.50@77.50

Sheep and lamb receipts were 8,502 head. Under a heavy supply the market is lower.

Sheep	$2.25@2.50
Lambs	6.00@8.65
Spring lambs	7.50@9.50

There were 10,080 hogs on sale during the week. Under a fair supply the market is lower.

Light western	$9.25@9.30
Heavy to medium	9.00@9.25
Near-by	9.00@9.25
Pigs	9.10@
Roughs	7.00@8.25

Calf receipts for the week were 550 head. Most of the receipts were of unattractive stock, and under a fair supply the market is steady at $6.00@11.00.

ELGIN BUTTER QUOTATION

Elgin Ill., June 2, 1913.

The quotation committee of the Elgin Board of Trade this afternoon declared butter firm at 28c a pound.

NEW YORK MILK QUOTATION

The wholesale price of milk is $1.51 per 40 quart can for class C; class B, $1.61.

PITTSBURGH HAY AND GRAIN

Pittsburgh, Pa., June 2, 1913.

Hay receipts show a slight increase, but the demand has disappeared so that the high prices of last week are now hard to find. Poor grades and threshed hay are not wanted. Straw receipts are in excess of the demand. The market is lower. No. 1 timothy, $15.00@15.50; No. 2 do., $12.50@14.00. No. 3 do., $9.00@11.00; No. 1 light mixed, $13.00@13.50; No. 1 clover mixed, $12.50@13.00; No. 2 do., $9.00@10.00. No. 1 clover, $12.00@12.50; No. 2 do., $7.00@10.00. No. 3 prairie, $10.50@11.00; No. 4 do., $8.00@9.00; No. 1 oat straw, $8.75@9.00; No. 2 do., $8.50@8.75. No. 1 wheat, $8.75@9.00; No. 2 do., $8.50@8.75; No. 1 rye, $11.00@11.50; No. 2 do., $9.25@9.50. Ear corn arrivals are in strong demand. No. 2 yellow, 66@67c; No. 2 high mixed, 63@65c. Shelled corn receipts are in fair demand. No. 3 yellow natural, 62½@63c; sample, 60@61c. Oats are in strong demand and the market is stronger. No. 2 white, 43½@44c; standard, 42½@43c; No. 3 do., 41@41½c; No. 4 do., 39@40c. The demand for middlings is slow. Market dull. No. 2 white mids., $23.75@24.25; No. 1 brown mids., $21.25@21.75. Winter wheat bran, coarse, $22.00@22.50; do., medium mids., $21.00@21.50.

TOBACCO MARKET

Transplanting is now well-under way, but it will be late in the month before it is completed. Plants are slightly late but generally plentiful, and it is thought that there will be enough for all, granting, of course, that neighbors share with each other. It is now thought that even more than a thousand acres of Havana will be planted; no one grower, however, planting but a small area of the comparatively untried variety. Much Havana will be planted in the Susquehanna River bottoms, it being thought that these are well adapted to the production of this variety. Success this year would mean 50 percent of the crop Havana next season. In the Landisfield section it is estimated that the total acreage will be reduced about 10 percent; at Marietta the reduction is placed at 33 percent; Ephrata, 25 percent; Lancaster, slightly reduced. At Salunga the acreage will be about the same, while from Island and Cn ton come reports of increased acreage.

The market is described as dull, with few sales, the latter being on a basis of former low prices. Packers report the finding of some black rot, but no more than usual at this time of year. The general tobacco market, as reported from New York, was fair, but with the prospect of no more than normal conditions. Trading was active on all types of leaf tobacco.

Petitions relative to the dangerous tariff legislation are being circulated, and all growers are urged to find and sign one of these if not solicited to do so. Congressman Geist is making every effort to block the nefarious legislation which has already passed the lower house, and he should be supported by every farmer in the state, and especially by tobacco growers. Surely free Philippine tobacco, the product of cheap labor and other low-priced productive conditions, would result in general calamity to our tobacco industry in general. With tobacco now selling at $5@6 per cwt., the farmers are not in position to accept a further reduction.—H. E. Tweed June 2, 1913.

COMMISSION DEALER COMPLAINTS

All shippers of farm produce to commission merchants in any New York market who have reason to complain of the practices of particular commission men should write at once to Hon. Calvin J. Huson, Commissioner of Agriculture, Albany, N. Y. State the facts clearly and concisely.

PENNSYLVANIA
AGRICULTURE THE KEYSTONE OF NATIONAL PROSPERITY
FARMER
ESTABLISHED 1880
PUBLISHED WEEKLY

VOL. 33.—No. 24. PHILADELPHIA, PA., SATURDAY, JUNE 14, 1913. 50 CENTS A YEAR.

Dr. T. J. C313

Some Important Soil Diseases of Potato.

By Prof. H. R. FULTON,
North Carolina Experiment Station.

Scab is caused by a fungus that attacks the skin of the tuber in spots causing a rough, corky development that is largely superficial. Thru these breaks in the normal protective skin various decay organisms may enter and cause rot before digging or in storage. The fungus can persist in the soil for several years, and it may also remain alive in the scabby spots on the tubers, or as spores in contaminated bins. The disease can be prevented only by planting clean tubers in clean soil.

Tubers safe for planting may be secured from an infected lot by selecting the smooth ones and soaking them at any time before sprouting or cutting in a solution of 1 pint of 40 percent formaldehyde (formalin) to 30 gallons of water for two hours. The formaldehyde may be used for many successive lots of potatoes if properly covered. Large quantities of potatoes can be treated more rapidly by generating the fumes of formaldehyde in an air-tight room in which the potatoes are loosely piled in crates. For a space of 1,000 cubic feet place 23 ounces permanganate of potash in a 12 quart galvanized iron pail and pour quickly over this three pints of 10 percent formaldehyde. Leave the room closed for 24 hours.

A VIEW IN THE GREAT TONOLOWAY ORCHARD, MARYLAND SHOWING A SMALL PART OF THE 700 ACRES.

Soil is infected wherever scabby potatoes have been produced, and the trouble will grow worse with succeeding crops unless a rotation is practiced that will keep potatoes off such land for several years. Beets and probably other root crops should be avoided as well. The starving out of the fungus will be hastened by making the soil less alkaline, and so less favorable for the continuance and development of the fungus. This can be accomplished by turning under green crops, such as rye or clover, and by using the ordinary commercial fertilizers. On the other hand, such things as lime, wood ashes and manure favor the development of the scab fungus, and must be avoided wherever the disease is to be reckoned with.

Scabby potatoes should not be fed to stock unless cooked, because of the danger of contaminating the manure. Transfer of infected soil in any way may distribute the disease.

Fusarium Wilt is caused by a fungus that attacks the feeding roots of the potato, killing them and extending into the tubers and the stem to about the level of the ground. The path of the fungus is the sap tubes. These are discolored brown by it. In the tuber this discoloration extends inward from the stem end and forms a ring near the surface in section. Affected plants suffer in their tops from the cutting off of water supply and may wilt suddenly; or the leaves may turn yellow and gradually dry up from their edges, if the deficiency in water due to root destruction and sap-tube clogging is more gradual. Usually this disease appears on plants scattered here and there in the field, and so differs from wilting of plants generally from drouth. It is more prevalent in southern sections than in northern. Affected tubers develop a dry rot in storage.

For control a crop rotation must be adopted that will keep potatoes off the infected ground for four or five years. No soil treatment is known that will shorten this period. Infected tubers must not be planted. Since the infection is internal, chemical treatment is not effective, but its use is recommended as a safeguard against external spore contamination. In cutting tubers all that show brown discoloration of the "sap-ring" should be discarded. A thin slice from the stem end will show the condition in this respect. Knives that have cut such tubers should be dipped in formalin solution or other disinfectant before being used further. It is best to secure seed potatoes that do not have any in the lot contaminated. Affected tubers should be consumed promptly or placed in dry, well-ventilated storage at about 40 degrees Fahr.

Bacterial Wilt is caused by a species of bacterium, but is closely similar in general symptoms to the Fusarium wilt. The bacteria attack the underground parts and produce a brown discoloration in roots, tubers, and stems. But their path may extend well above ground to the tips of the stems. This and the possibility of squeezing drops of milky masses of bacteria from the darkened tubes are two distinguishing features. There is danger of insects carrying the bacteria on their mouth parts after feeding on diseased plants, and general insect control is a means of lessening the spread in the crop. The invaded tubers rot under wet conditions, but other organisms may be responsible for such a condition. What has been said under Fusarium wilt about crop rotation, avoidance of infected tubers for planting, and prompt consumption or careful storage of the crop, holds equally for this disease. Tomato, egg plant, pepper and tobacco are also susceptible to this disease, and should be avoided in rotation.

Black Leg is a more noted bacterial disease that attacks the lower stem and tubers of the plant. The tops of affected plants are unthrifty, with yellowish leaves very much as in Fusarium wilt. The distinctive feature of black leg is a superficial inky black discoloration of the stem extending from near the ground surface to some distance below. In wet weather the stems may rot completely and topple over, and the tubers be affected with a rapid soft rot.

Control of this disease depends on the selection of unaffected seed tubers, and the practice of a long rotation on land that has become in any way infested. Surface disinfection of the tubers is helpful, but not an absolute safeguard.

MAKING CLOVER HAY

The making of good clover hay is an art not easily described in cold type. I call to mind a story of Emerson which I read a good many years ago. It concerned a young writer who had sent him some verses for criticism. In his reply, after a word of mild commendation, Emerson suggested that a happier day would add something which "can neither be commanded nor described." I am quoting from a rather hazy memory. The thought, if not the exact words, comes to me in connection with the subject of making good clover hay.

Which is the greater art, the writing of a poem or the making of 40 acres of choice clover hay? One thing is certain, there are many things which have to do with the art of making good clover hay that "can neither be commanded nor described." For instance, take the matter of when to cut the clover, i. e., with reference to maturity. We sometimes say when it is just past full bloom and about one-fourth of the blossoms are turning brown. But it is impossible to say with accuracy just when a field is in this condition. Our artist will have to depend upon something besides mathematics to tell him when to cut clover. Call it judgment, feelings.

or whatever you see fit. And furthermore, this when will have to be modified by the weather prospects. Our artist will have to scan the heavens, the barometric readings and possibly end up by consulting his rheumatic pains.

As applied to the time of day, the "when" can perhaps be stated more accurately. One mows clover hay in order that he may remove it from the field to the barn or stack. Before it is removable, it must part with a large proportion of its moisture. When first cut it carries more than 65 to 85 percent of moisture. When stored in the barn it should not carry more than 16 or 20 percent. It is desirable to expend as little effort and time between the mowing and storing as possible. The less work, the less expense. The shorter the interval of time, the less chance for losses from bad weather.

The afternoon, then, would seem to have the preference for mowing, for plants have much less water in them in the afternoon than in the morning, as witness their wilting of a hot afternoon. Mowed any time from 3 to 6 or 7 P. M., clover will not dry enough to be hurt very much by heavy dews; and even if rain comes there will be but little damage if it be shook out as soon as the weather becomes fair. However, one should avoid the rain, if possible, and he stands a better chance to avoid it starting the mowing machine at 3 P. M. than at 7 A. M., except late in the season when the clover is over ripe.

The tedder is a useful implement in the hay field. In heavy clover it is almost indispensable. Hitch to it as soon as the dew is off in the morning, or before it is entirely off, and toss the clover into the air. It will be helpful to run over it a second time. The rapidity with which clover will cure depends upon its maturity, upon the dryness of the ground under it, and upon the sun and air. With all things favorable, it may be ready to store in 20 to 24 hours after mowing, and late in the season, in less time. Very early in the season it may need a little more time. With a considerable acreage to cut one will have to harvest clover both early and late.

The eastern farmer, with his fewer acres, will probably put his clover in the haycock for two days or so, and by doing this will make a little finer quality of hay, saving the leaves somewhat better than the western farmer, who does everything in a hurry with machinery. Whichever method is followed, it is not advisable to store clover until it is well cured. Half-cured clover is a source of danger. With 75 to 80 percent of moisture in it (freshly cut) clover will keep all right in a silo, there being enough water in it to prevent its drying out as it heats up. When half cured there is great danger that as it heats up it will not only dry up but burn up. I have seen pretty fair silage produced in the hay mow, but more often a musty, fire-fanged product that is neither hay nor silage.

I know of no simple, absolute rule by which one can determine just when clover hay is ready for storage. Personally, I have never been helped much by twisting a few stems of clover. When handling hay with a hand fork, its weight is a pretty good indicator of its condition. Most men can tell hay when they handle it at the end of a fork, even if they can not describe it. A moisture determination, such as can be made with the Brown-Duval tester in 20 minutes, would tell the story promptly, but very few haymakers are equipped with this apparatus. They will therefore have to fall back on their judgment as educated by experience. Right here come in the art of curing properly and still saving the leaves. A ton of clover leaves is worth two or more times as much as a ton of clover stems. One must save the leaves.

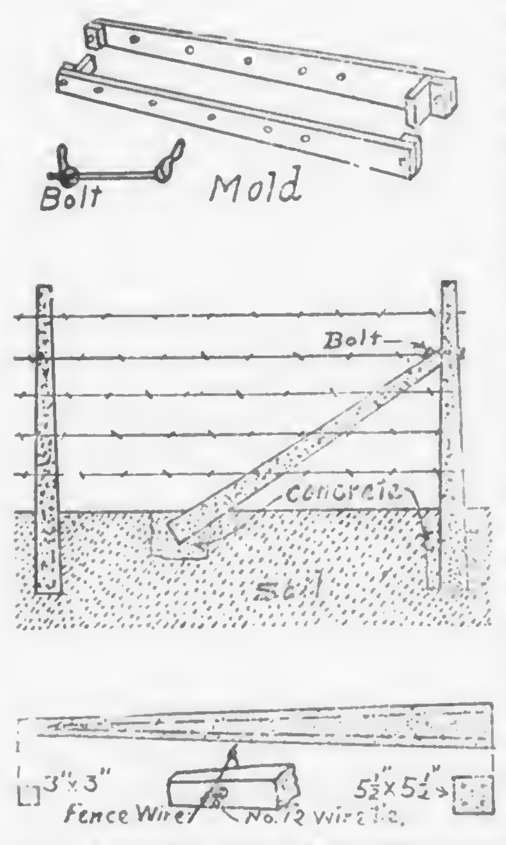
I have mentioned the tedder but said nothing concerning the side delivery rake. Some of our large farmers are using the latter to the exclusion of the tedder. If used with sufficient frequency, turning the small windrows over a number of times when needed, it answers the purpose of the tedder and saves some time. With the hay loader and the horse fork and slings, hay making has been revolutionized.—C. G. W.

CONCRETE FENCE POSTS

The following method for making concrete fence posts is simple and easily done, the posts are durable, the material costs but a trifle and the mould can be used indefinitely.

Lay a board 7 feet long 8 inches wide on your workbench. On either side stand a tapering board 7 feet long and 5½ inches high, at the wide end, against it. Fit blocks on each end. Secure the boards together with hooks and screweyes. The box should be 7 feet 8 inches by 5½ inches, without a top.

Next bore holes near the corners in the ends of the box. Four in each end, and run a wire (new or old) from end to end, for added strength in the finished produce.



MOLD AND METHOD OF ERECTING CONCRETE FENCE POSTS.

Now cut pegs the width of the box and nail them with a single nail. These are cores for the holes in the post to put the fence wires thru, and can be placed any distance apart desired.

Mix the cement and sand together, in the proportion of one cement and two sand. Incorporate with water. Pour into the box and level the sides with a smooth stick. If the sides bulge nail a strip across the box. Permit the cement to harden, unlock the box, drive the core pegs out of cement, and the box can be refilled for another post.

Another method which is as easy and perhaps cheaper is the ground method.

Dig a hole in the ground, clay soil preferred, the length you want to be the hight of your post. The width and depth desired for the post's thickness. Run two wires the length of the hole near the outer edges, for extra strength. Mix your cement and sand together in the proportion of two sand and one of cement. Incorporate thoroly with water and pour the mass into the hole till it is flush with the surface. Drive pegs down thru the mass into the soil underneath. Permit the cement to harden three to six days. Dig out. Drive the pegs out of the cement, and the post is ready to be planted.—A. L. Roat, Philadelphia Co., Pa.

SAVE THE LIQUID MANURE

When it is considered that liquid manure contains from three to four times the amount of plant food as is contained in an equal weight of the solid voidings, it is not hard to understand why it is important and highly profitable to save the liquid manure. While the total weight of the liquid excrement is considerably less than that of the solid voidings because of its being so much richer in plant food than the solid, it is about equal in total value and should be saved by every farmer and dairyman.

The Pennsylvania State College gives the amount of plant food as 24 pounds to the thousand, while the same weight of solid manure contains only six pounds. The difference is nearly as great in the manure from horses, the liquid manure containing 24 pounds of plant food and the solid excrement 10 pounds. In the case of horse manure, however, there is not so much danger of losing the liquid manure because of the dryer composition of the so-called solid manure, which contains only about 50 percent of moisture.

A large part of the plant food originally contained in the food consumed by stock is excreted in the manure, part of which goes into the liquid and part in the solid voidings. The more valuable compounds are found mostly in the liquid manure, namely, nitrogen and potash, the solid manure containing the undigested portions of the feed. About 40 percent of the nitrogen contained in the feed passes off in the liquid manure, and a little more than 23 percent in the solid, the other 35 percent being used by the animal. Forty-five percent of the potash of the feed goes into the liquid and about 30 percent into the solid portions, the animal using only about 25 percent. The phosphoric acid of plants being united with lime and magnesia compounds which makes it insoluble in the digestive fluid, passes off in the solid manure. About 60 percent of the amount contained in the feed is excreted in the manure and 40 percent retained by the animal. These figures, which have been determined by scientific and reliable experiments, should emphasize the importance of saving every pound of liquid manure because of the larger percent and more valuable plant food compounds it contains.

The first precaution to take in saving liquid manure is to provide water-tight gutters, preferably of cement, which will prevent it from draining away as fast as it is excreted. The next thing to look after is to provide plenty of straw or litter to absorb and hold it. The importance of using plenty of straw for bedding is not entirely to make it comfortable for the animal to lie down and to keep it clean. Its financial value as litter is because it is one of the best absorbents that can be provided on the farm. The tubes quickly fill with liquid and hold it so tight that it can be applied and distributed evenly over the land. A pound of straw will hold more than twice its own weight of liquid, rye and wheat straw being slightly more valuable in this respect than oat straw.—L. J. Haynes, Erie Co., Pa.

REPORT OF FARM BUREAU

The Farm Bureau of Jefferson County, New York, was the first one organized in the state. The first annual report of the manager, F. E. Robertson, will therefore have special interest to all persons who are familiar with the plans of these county bureaus. During the year Mr. Robertson has traveled 3,500 miles by rail and 1,650 by wagon, and he has put the bureau in touch with 450 farmers. The varied lines of work attempted will be seen from a brief summary: Distributing early varieties of seed corn among 39 farmers; instituting farm boys' judging contests, with 18 boys participating; also judging contests; organizing three cow-testing associations; arranging for boys' corn-growing contests for 92 boys; providing demonstration plots at fair grounds; co-operative field demonstrations; growing timothy hay for seed on 25 farms; winter vetch for forage and for seed on three farms; soy beans for silage on 13 farms; lime demonstrations on six farms; seeding pasture mixtures, potato breeding, test of oats, orchard pruning and spraying, and farm accounting co-operation each on several farms. Mr. Robertson remarks on the prevalent scarcity of farm labor, and says it will continue to be scarce until the type of farming has adjusted itself to the conditions. Of these conditions he mentions a more common use of machinery and horse power, the furnishing of labor for man and horse thruout the year, and not for a brief period of six or eight months; paying wages at least equivalena to what men may earn in other fields of work; and, lastly, until population has appreciably increased. He emphasizes the necessity of individual farmers co-operating with the bureau to make it the success which it may be.—J. W. D.

THE LONG JOHN POTATO

About the first of June, 1911, I bought some potatoes of a neighbor. Upon examination I recognized them as the old Long John, or long, red potato that was a popular variety when I was a boy, about 40 years ago. They did very well, altho early potatoes were almost a complete failure here. I planted a few of them last spring, but they did not grow as well as the earlier varieties for me this year.

I sent a single potato to a man in Dodridge County, W. Va. It was a small potato, but he evidently know how to grow potatoes, as I got a card from him a few days ago stating that he grew one peck of marketable potatoes from this single tuber.

The Long John potato, as I remember them, were not first class in quality, but were the best yielding variety of large- long tubers that has ever been grown here. When planted in June the vines would stay green until frost.—A. J. Legg, Nicholas Co., W. Va.

Note.—Perhaps some other of our readers know of this potato. If so, we would like to have their experiences with it.—Editors.

USE OF LEVEL IN LAYING TILE

An occasional farmer who desires to lay his tile drains on a better and more certain grade has been deterred from purchasing a farm level because when ditching he is generally alone, and consequently has no assistant to carry the target. Or others may have not bought levels because they do not understand them.

With regard to the latter, it may be suggested that the farmer buy the level and learn how to use it afterward. For using a level without an assistant we developed a system that is easy to follow, both in surveying the ditch and for testing the grade as it is made. We simply use new plastering lath driven into the ground a uniform distance, say three inches; having marked these lath in inch or two inch divisions the grade of the ditch may be outlined with just as much ease as if the regular pole had been used on permanent pegs driven flush with the ground along the line of ditch.—G. P. Williams, Ohio.

Live Stock

PORK GROWING ON EASTERN FARMS

On many farms in the east pork growing is a profitable side line. This is due, in part, to the high prices of all meat products, and in part to the ability of the hog to profitably utilize a wide variety of farm products and by-products. This ability has led many farmers who have kept a few hogs successfully to conclude that pork growing on a commercial scale would afford correspondingly large profits. Such a conclusion has invariably resulted in failure. While pork growing can be made very profitable if the number is limited to what may be used to consume the wastes, it is doubtful if an extensive system of pork growing will ever be developed in this part of the country. The place where pork growing can be conducted economically is on the dairy farm where only the cream is sold and where corn can be produced cheaply and abundantly.

Successful pork growing on eastern farms depends largely on feeding early-maturing pigs that may be profitably marketed at any time from five to eight months of age. This does not depend upon the breed, altho that has a great deal to do with it, but upon rational feeding and care. Personally, I like the Berkshire for feeding for pork adapted to our eastern markets. They give a carcass that is well proportioned with fat and lean meat, and make economical gains at an early age. No matter what particular breed is selected, there must be a careful selection of individuals within the breed if we are to intensify the early-maturing habit.

PIGS THRIVING IN WOODS PASTURE.

Only the most promising young sows should be kept for breeding purposes. Some breeders assert that the breeding boar is a more important factor than the sow in perpetuating good qualities in the herd, but the sow has a greater influence in furthering the plans of the breeder and improving the type of the pigs. She supplies nourishment during the first few weeks of their lives and consequently must have a sufficient number of well-formed teats to care for large litters. Size, quality and finish are essential in a good brood sow. The most sensible way of selecting prolific sows is to keep a record of the herd, and use it as a basis of selection in determining which pigs to develop for breeders.

Whether we are breeding registered stock or feeding out the pigs for pork, I have never been able to understand the claim that it is unprofitable to attempt to get two litters of pigs a year from each sow. I know from experience that the difference between substantial profit and decided loss has been my ability to handle my sows so as to get two litters a year at about the desired time. Some of the best animals I ever handled have been fall fallowed pigs, and some of the most profitable pigs I have ever sent to market have been fall pigs that have been carried thru the winter in good condition and marketed either in June or early in July, at about 225 pounds, or during the early fall at heavy weights after they had been grown upon forage crops during the summer and fed corn for a few weeks during the summer and early autumn.

Breeding sows to farrow two litters a year and at the right time requires careful management. We breed our sows to farrow their first litter late in February or early in March, and plan to have the pigs weaned in time to breed them to farrow again early in September. If the sows are fed well after the pigs are born, and if the pigs are taught to eat solid food and drink milk at an early age, they can be safely taken from the sow at seven or eight weeks of age. The whole litter can be removed within four or five days. The prolonging of the milk flow too long will make the fall litters come too late to get a good start before the winter comes. The average sows will breed within a week after they are removed from their litters. This will bring the fall litters at about the right date. Should any fail to get with pig for a fall litter, they may be carried over and bred again for a spring litter or fattened and sold. We keep over enough sows so that we can spare those that do not get with pig at the right time.

We give our sows access to forage crops and green feed during the whole of the growing season. We also plan to utilize waste feeds, fallen fruits, roots, vegetables and by-products from the dairy. These are not sufficient for the sow's diet, but they furnish the needed variety, bulk and succulence. The sow is not fattening and is therefore only required to assimilate sufficient food to maintain her condition and produce a litter of pigs in six months. A good prolific sow should be kept as long as she produces good-sized litters of strong, healthy pigs. There is decided economy in keeping fully-matured sows rather than breeding from young gilts.

By mixing farm feeds intelligently and producing the feeds necessary to supply the deficiency, we can increase the feed and keep a correspondingly greater number of hogs and produce more pork at less cost than if fewer hogs are kept and fed exclusively on what is raised on the farm. For example, many dairy farmers feed skim-milk as an exclusive diet to their growing pigs, and obtain a fairly good growth and development. But it is an expensive feed. It gives an excess of protein and is deficient in carbohydrates and fat. Far more satisfactory and economical growth may be obtained by balancing the skim-milk. Corn meal mixed with skim-milk makes a valuable ration. Many good feeders use wheat middlings instead of corn meal with their skim-milk, but as a rule better results will come from the corn meal, because wheat middlings are too rich in protein.

Nor is it likely that one can make up an economical ration without such grazing as will promote the most vigorous and healthy growth. From weaning time until the pigs are five or six months old, protein is an important element in the ration. Corn is nine-tenths carbohydrates; oats contain more protein than corn, but hardly enough to meet the requirements of growing pigs. Rye is richer in protein than oats, but as a pig food barley exceeds all the above, and is a sure crop on many farms where corn rarely matures. Clover and alfalfa are highly rich in protein, but are too bulky to suit the needs of pigs. Cowpeas, soy beans and Canada field peas are well suited for pork growing, where they can be raised. Various localities can produce feeds that may be used advantageously to balance up the ration. Linseed oil meal, middlings and tankage all have their place in economical pig feeding, which must be regulated by the variety of farm-grown feeds at hand and the prices in the near-by markets.—W. Milton Kelly, Erie Co., N. Y.

SOY BEAN CAKES FOR CATTLE

According to a report received by the Department of Commerce from one of its foreign agents, there is considerable interest in Europe in the use of soy beans and products for cattle. In Germany the cattle are mostly kept in stables, and since they have little outdoor exercise, they are apt to have digestive ailments if overfed on soy bean cake. In Denmark, on the contrary, where the cattle are mostly driven to pasture, the demand for this kind of feed is increasing. Dealers claim that the cake made by simply pressing contains 46 to 48 percent protein and carbohydrates.

Farm Drainage.—As to the profits from drainage, Farmers Bulletin 524 of the Department of Agriculture, Washington, D. C., says: "It is not uncommon for lands too wet for cultivation to produce, when drained, 60 to 70 bushels of corn and oats. On a great deal of land the increase in yields is often from 25 to 100 percent. In some years on some wet soils drainage may not pay, while on others it may be necessary in order to save the entire crop. By increasing the yields and decreasing the cost of cultivation, the profits and value of the land are often doubled." The entire subject of drainage is well explained in this bulletin.

Forage for Swine.—Bulletin 136 of the Iowa Experiment Station, Ames, Iowa, discusses forage for swine. It says: An acre of 50-bu. corn land devoted to good forage with corn at 50 cents and hogs at $5, returns from $30 to $80 net profit when grazed with spring pigs. Alfalfa, rape, clover, oats, clover or peas and rape, sweet clover and others are acceptable forages. The cost of a hundred pounds gain, all expenses included with corn at 50 cents, on young pigs with best forages, alfalfa, rape and the clovers, runs from $2.88 to $3.96, with older heavier hogs from $4.23 to $5.31.

Resume Soil Survey.—The Bureau of Soils, at Washington, in co-operation with the state experiment station, will this spring resume field work of soil survey of the Freehold, N. J., area. The survey is being made for the purpose of determining the different types of soil in the area and what crops they are best adapted to. This is the section selected by the government some time ago for the farmers' bulletin on "Modern Systems of Farming."

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Horticulture

HOW TO PRUNE RASPBERRIES

By Prof. W. J. Wright, New York School of Agriculture

Nature's object in producing fruit is to reproduce the plant. She is therefore especially interested in the seeds. Man, on the other hand, except in a very few cases, is most interested in the flesh part of the fruit. One of the objects in pruning, then, is to reduce the number of fruits the plant sets so that more of its energy may go into the production of the edible part. A small, worthless apple, for example, contains as many seeds as a large luscious one, but is far less palatable.

In pruning raspberries, therefore, one of the objects is to reduce the number of fruit buds. Another object is to keep the plant in the smallest possible space consistent with profitable production. Still another object is to destroy injurious insects and diseases with which the old canes may have become infested.

In pruning raspberries these principles should be kept in mind: First, the fruit is borne only on canes which grew the previous summer; second, old canes die as soon as they have once fruited and are a menace to the plant; third, black raspberries and red raspberries differ somewhat in their manner of growth and must be pruned accordingly.

Black Raspberries

Good strong black raspberry plants will send up several shoots or canes during the first summer. Only three of them should be allowed to grow, and as soon as they are 30 inches high the terminal bud should be pinched out. This causes it to stop growing and to produce branches which in turn will bear the fruit the following year. The second spring several shoots will again be sent up from the root. Four or five of the strongest of these should be allowed to grow and the others cut out. While these are growing the old canes will bear a small quantity of fruit. They should be cut out and burned immediately after they have finished fruiting. The tips of the new canes should be cut out as soon as they reach a hight of 30 inches, as before. The second spring, if the branches from the canes have grown 24 or more inches in length, they should be pruned back to 18 inches. This will reduce the fruiting surface to what the plant can well mature, and will also keep the plants in manageable shape so that they may be more easily cultivated and the fruit more readily picked. If this method is followed regularly and the other operations of cultivation, etc., are faithfully performed a good crop of large, juicy fruit of good quality should result.

In brief, the operations are as follows: (1) Allow only the five strongest new canes to grow. (2) Cut out tops of new canes when they are 30 inches high. (3) Cut out and burn all old canes immediately after fruiting. (4) If the branches of the new canes grow longer than 20 or 24 inches, cut them back to 18 inches early in the spring.

Red Raspberries

Red raspberries have a tendency to throw up a much larger number of new canes or suckers than do black raspberries, and often at some distance from the parent plant. Cutting off the ends of new canes in midsummer increases this tendency. Moreover, the ends of red raspberries are often killed back during the winter. For this reason it is seldom wise to pinch out the terminal buds of the new canes during the summer, but they are cut back the following spring. The plants are naturally higher growers than are black raspberries, so that they are usually cut back to 36 instead of 30 inches. When so pruned they require no stakes or trellises, and hence much time, labor and expense are saved.

In brief, the pruning schedule for red raspberries is as follows: (1) Keep down all new canes or suckers, except the five or six strongest ones in the vicinity of the parent plant. (2) Cut out and burn all old canes as soon as they are thru fruiting. (3) Cut back all canes to about 36 inches early in the spring and shorten lateral branches, if they have made a large growth, to about 18 inches.

THINNING THE APPLE

The most neglected and still without doubt one of the most profitable of all orchard operations is thinning.

We are all aware that many trees set a great many more fruits than they can properly mature, and if they are allowed to remain on the tree nothing but an inferior article can be the result. Some who have never tried thinning do not believe that you can reduce the number and improve that which remains, while others realize that fact, but claim the cost is too great; they simply fail to look at the problem correctly. Thinning is certainly a matter of considerable expense, but the fruit is on the tree; it must be harvested at some time, and it costs less to harvest it when small than when mature, at which time it must be taken to the packing shed, sorted, and many then thrown away as culls. So as a matter of expense it amounts to very little.

STOCK FROM WHICH BUDS AND CIONS ARE TAKEN FOR THE PROPOGATION OF TREES IN A NURSERY.

When your trees are overloaded by all means thin the fruit as you will always find it profitable. By thinning you are able to produce a finer product, which always brings a higher price, and at the same time you are eliminating practically all culls, as the poor and injured fruits are all removed. Still more, we are conserving the energies of the tree, which is of vast importance. In many apple orchards we have what is known as the full and the off years; the one year the trees are loaded, the next they have practically nothing, which has led to the belief, by many, that apple trees do not bear every season. This is true to a certain extent with a few varieties, but in many cases it is due to the neglect of the owner. We find that on trees which are properly thinned, one spur produces fruit this year while another is storing up energy for its turn the following year, and instead of a crop every second year, there is a crop each year. On trees which are not thinned, practically all of the spurs produce fruit in the full year, which so saps the energies of the tree that it is not able to properly develop its fruit buds and the next year it is barren.

In my first article I tried to point out the great importance of quality, and you can only have quality in an apple which is of full size and color. This can never be secured upon a tree that is overloaded with fruit.

Begin thinning as soon the the fruits can be handled easily; say, when the size of a hickory nut. First remove all wormy or knotted fruits and then thin the remainder so that they shall be from six to eight inches apart. Altho these small green fruits may be removed by picking, you are very liable to break off many fruit spurs, and it is far better to use a small hand shears or even a good stout scissors, with which you can clip off the fruits very rapidly.

Finish thinning as quickly as possible, as the longer these surplus fruits are allowed to hang, the more energy they are sapping from the tree.—Sheldon W. Funk, Berks Co., Pa.

ORCHARD FERTILITY

The past season's bountiful fruit crop and its highly remunerative returns will prove an almost irresistible incentive to the fruit grower and general farmer to enlarge the area devoted to this (without doubt) the best paying of the great diversity of crops. While fruit growing is bound to become more of a specialty in this highly favored region, we certainly do not think it advisable for the average farmer to rush headlong into the fruit business to the exclusion of everything else, as such an extreme might possibly prove, in coming years, as disastrous to our resources as the production of cotton exclusively has proven to the south.

If, as has been claimed, that a 250 bushels per acre crop of apples will remove from the soil as much fertility as an average crop of wheat, it is plainly evident that fertility must, from time to time, as the growth of tree and production of fruit demand, be restored to the soil. As potassium, nitrogen and phosphorus are the elements of fertility most rapidly exhausted, these can be most cheaply restored to the soil by the application of stable manure, if the supply is adequate to the demands of the orchard in addition to those of the remainder of the farm. While these elements can be restored to the soil by application of the commercial forms, yet to rely upon them exclusively we do not think results would prove perfectly satisfactory, as under the clean culture method the soil would soon become practically destitute of humus, the great value of which as an aid in the conservation of soil moisture and in mechanically improving the condition of soils we should by no means under estimate.

As will prove the case with the average farmer, as he increases the area devoted to fruit, he decreases in the same ratio the area devoted to diversified farming, consequently the number of live stock and the quantity of manure manufactured, the annual application of which, with a short and judicious rotation of crops in which clover has figured most conspicuously, has been barely sufficient to maintain the fertility of the soil under a well managed system of diversified farming and live stock production or dairying.

The question presents itself, how is the fertility of these rapidly increasing areas devoted to fruit growing going to be maintained and added to? In many instances the land to be so utilized is a sand hill, the soil of which has become so depleted as to render its devotion to the ordinary field crops no longer profitable. By the thoro culture method as practiced by most successful growers, little or no opportunity is afforded to add humus and fertility by the growing and plowing under of crops, excepting as is afforded by the brief period of growth intervening the last cultivation and the end of the growing season, it is plainly to be seen that the fertilizing material will have to come from the balance of the farm—which will prove a "rob Peter to pay Paul process"—or the commercial forms will have to be used.

In our judgment the problem of the maintenance of soil fertility is to the fruit growers, as well as to the general farmer, a most vital one and demands our best thought and closest attention to every detail, for upon its proper solution depends as much as upon any other one essential, the future success of orchard growth and fruit production.

Indications are that there will be more fruit trees planted in most sections of this fruit belt the coming season than in any previous three. While it is encouraging to know that fruit growers and farmers are awakening to the great possibilities of fruit growing, it is apparent that many mistakes will be made in the planting of these new orchards, to avoid which we think the only safe plan for the amateur would be to consult some good, reliable authority as to kinds and varieties best suited to location, soil, market, etc.—Homer Shirley.

EXPERIMENTS WITH MUSKMELONS

According to experiments reported to the Department of Agriculture by the Illinois Station, there may be wide differences in the relative effects of different fertilizers for Gem cantaloupes in different seasons. Under the conditions of the experiments, however, it was found that manuring in the hill proved far superior to broadcast manuring, except where a very large amount of manure can be broadcasted. A large amount of manure used in the hills is conducive to the production of a large yield of early melons. Owing to the expense of the manure, however, from 2½ to 3 tons of manure per acre carefully applied to the hills may produce a greater net profit than 4½ to 12 tons per acre applied to the hills, or from 16 to 20 tons applied broadcast. The addition of raw rock phosphate to a moderate amount of manure in the hills may increase the yield of early melons, the total yield, and the net profits in the field planted crop. While the use of a complete fertilizer consisting of steamed bone, dried blood, and potassium phosphate, applied broadcast in addition to manuring in the hill may increase the total yield, the cost of such a fertilizer may render its use inadvisable. The application of the chemical fertilizer to the hills in place of manure is attended with great danger, especially to the field planted crop, where the yield may be greatly reduced as compared with no fertilizer treatment.

Horticultural Queries.

This department is conducted by Prof. H. A. Surface, State Economic Zoologist. Questions answered and timely and practical problems in treatment and control of farm and orchard pests discussed. Our readers are given the benefits of the advice of one of the foremost authorities in the country in this department. Address all queries to Pennsylvania Farmer, Philadelphia, Pa.

Cleaning a Boiler After Using Lime-Sulfur Solution

I have just purchased a practically new farmers' boiler for butchering purposes, principally, but as that season is over, I should like to use the same for boiling the lime-sulfur wash. Kindly let me know if it can safely be used for lard and scrapple after boiling with lime and sulfur.

On account of the affinity existing between iron and sulfur, I thought perhaps the sulfur might permanently adhere to the cauldron.

If the boiler can be used for this dual purpose, please inform me as to how to clean it after using.—W. I., Penn's Park, Pa.

You can safely use your kettle for butchering purposes after you have used it for making the lime-sulfur solution, but it is important that it be cleaned soon after the lime-sulfur has been boiled in it, or it will rust and the interior will become roughened. It is a good plan to have a few old iron kettles for boiling the lime-sulfur solution, and you will not be obliged to bother with cleaning them absolutely.

In the case of the kettle you wish to use for lard and other purposes, you will have to scrub it with hot vinegar to get rid of the lime. Then grease it well and oil it, or apply grease to keep it from rusting. It may be possible that continued use in boiling the lime-sulfur solution may pit or roughen the surface of the kettle. This will not injure it, altho it will not increase its value for the special purpose for which you wish to use it.

The best thing possible for boiling lime-sulfur solution is to use a galvanized sheet iron box-shaped vat, like a cigar-box in shape. You can buy water tanks, ready made, that will just about serve the purpose you want, and by cutting a hole at the one end near the bottom, you can insert a pipe and spigot to draw off the liquid, if you wish. A flat boiler of this kind over a stone or brick-walled furnace will boil this liquid nicely and last for years. It also should be kept fairly clean after you are thru with it each season, so that it will not rust out.

Soil Inoculation

Will you kindly inform me how to secure soil inoculation? Are the commercial cultures that are sent by mail satisfactory?—J. B. E. Crawfordsville, Pa.

I do not recommend a commercial method of inoculating your soil. The best way to inoculate is to get soil from some field that has grown the same kind of legume crop that you wish to grow, and scatter this lightly over yours just before seeding. Two hundred pounds to the acre will be sufficient. This is, of course, only for the legumes, or members of the pea, bean and clover family, and you should inoculate from soil in a field that has recently grown the same kinds of plants that you wish to grow on your own.

FRUIT TREES IN THE GARDEN

Farmers too often crowd fruit trees into their gardens to the detriment of their vegetables and bush fruits, and the practice should be discouraged. I have made the mistake myself. In our garden of half an acre I had altogether, on the north and east sides, 14 peach trees; on the south side, three cherry trees, one peach and one plum tree; on the west side, one quince, one plum and three dwarf pear trees; thru the middle of the garden was a row of grape vines on a trellis. The consequence was that when all the trees had grown, and began to bear, I had to cut down the peach trees, or move the garden to some other place; or, more properly speaking, make our garden in some other place. Not only did the trees shade the vegetables, but their roots extended far out under and around them, and robbed them of fertility and moisture. In a dry time the trees, being the stronger, would seize upon the moisture, and the vegetables would suffer.

I had an onion bed on sloping ground, and when the onions were nearly full grown there came a heavy rainfall in the night and washed away the mellow earth of which the bed was composed without breaking their roots or washing them away. The sight was astonishing! I had never dreamed that onions had roots so long. They had spread out in every direction, and some were two feet long.

It has been stated that the roots of trees extend from the trunk about as far out in the earth as the limbs extend over it. The truth is they extend a great deal farther. I have seen forest trees growing along the river and creeks washed out by floods, and some of their roots looked like ropes, and were four times longer than any of their limbs.

There are grasses and weeds that will grow very well in a shade. I have seen celandine growing vigorously in places where it never saw the sun, but I never saw any garden vegetables or plants that would come to perfection in a shade. Some will endure a permanent eclipse better than others, but none that are valuable will flourish best when robbed of the sunlight.

Even apples and other fruits will not color well and have their luscious taste when too much shaded by limbs and leaves of the trees upon which they grow. Small fruits, like currants, gooseberries, raspberries and strawberries, may be grown in the garden without injury to the vegetables, and are convenient to the house for gathering.—J. W. Ingham, Tioga Co., Pa.

COMBATTING THE PEACH TREE BORER WITH ASPHALTUM

It has been found by the California Experiment Station that a thick, heavy coating of hard asphaltum, grades "C" and "D," prevents both the issuance and the entrance of about 95 to 98 percent of the peach tree borers, the degree of efficiency depending upon the thoroness of the application. Asphaltum does not penetrate, crack, deteriorate, or bind the tree, since it yields to the slightest pressure. Four years of experimenting have not shown the least injury.

PUBLIC HEARING ON GYPSY MOTH AND BROWN-TAIL MOTH

The United States Secretary of Agriculture deems it necessary to extend the present quarantine lines in New England to prevent the distribution of the gypsy moth and the brown-tail moth to sections outside of the New England States. A public hearing will be held at the Department of Agriculture, Washington, D. C., at 10 A. M., June 12, 1913, in order that all persons interested in the extension of these quarantine lines may be heard.

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The Dairy

THE COW BARN

By Dr. M. E. Conard, Chester Co., Pa.

There is probably no feature of dairy equipment that needs our attention more than the cow barn. First, because the profits of the dairy are regulated, to a very great extent, by the environment of the cow. Second, because the health of the consumer of dairy foods is more or less affected by the condition of the atmosphere in which the milk is exposed.

The profitable dairy cow is an artificially developed animal, whose vigor or vitality has been, by selection, breeding, housing and feeding, largely transposed from individual self-protection, or disease resisting ability, to the production of milk and butter, and we carry her energy away from her just as fast as we can coax her to give it to us in the shape of milk. Still we wonder why we have so much tuberculosis, abortion, milk fever (so called) and the like. We were not troubled that way years ago. Why should we be now? Such maladies as these are the natural and inevitable result of the proper development of the dairy cow, and it is our place, as intelligent dairymen, to compensate, so far as it is possible, to the cow for that which we have taken from her in the process of her development for our gain.

FARM HOME OF V. ROSS NICHODEMUS, BEDFORD CO., PA.

I think the stable in which she spends so much or her time contributes as much to her troubles as any other feature of her care, or neglect, as you choose. If it is too dark and no attention is paid to ventilation, as we generally find them in the older barns, there are in the stable many of the most fruitful causes for the presence of disease. Animals kept in such places become more favorable subjects for the attack, and have much less resistance. If we could only realize the advantage to be gained by admitting into our barns and our homes that God-given antiseptic and purifier, sunshine, the benefits would be more than we can imagine, and the effect for good would be far reaching.

In the construction of new barns it is not difficult to provide for sun light; but in many of the old, bank barns, so common in Pennsylvania, the chances for windows are not good. If they are so located and built that plenty of light can not be admitted, they are neither suitable or safe places to house the farmers' factory, and should be used for the storing of inanimate machines, and a better place provided for the dairy. The dairy is the farmer's factory, the efficiency of which measures his succes or failure.

Sunlight can generally be let in by opening the wall on the east and west sides, and the placing of plenty of windows there, leaving between them columns of foundation wall sufficient to support the building. There should be one-third of the east and west wall replaced by windows. The morning sun, during the stabling season, while the sun is low, will shine into the east windows, and as it passes around south it will gradually swing the patches of sunshine around over the floor until almost the entire floor has had a sun-bath and a pretty good disinfecting, to say nothing of the good effect it has had on the cows. The same thing occurs in the afternoon thru the west windows, which means that the entire floor has had a sun-bath and the greater portion of it gets two. The south windows are not quite so important, because at the time of day that the sun shines on the south side of the barn, it is so high that the shadows will not reach far into the stables. But there should be windows in the south also.

A convenient sized window is of twelve 8 x 10 lights, made in one sash and set on end. The sash is not fastened in the frames with hinges, but is just set loosely in the frames, so they can be removed easily to clean or to be substituted with a fly-screen. They can be fastened by means of buttons or little hooks. Such windows make fairly good ventilators, by dropping the sash into the stable at the top far enough to admit the desired amount of air. The air enters near the ceiling, where the inside air is warm, thus avoiding cold drafts directly on the backs of the animals. In small barns or long stables, where there are only two rows of cows, this arrangement of windows serves very well as a ventilating system, altho not as perfect as the King system. The ceiling and side walls should be tight, smooth and well covered with whitewash, making them unattractive to spiders and not offering places for dust to lodge. The whitewash intensifies the light.

The floor possesses many possibilities for good or evil, depending upon the material used and how constructed. As we generally find the earthen floor, with its excavated patches soaked with urine for years, I do not see how anything could be much worse for the health and comfort of the cattle. The urine-soaked earth is continually giving off a stinking, penetrating odor or gas, filling the stable air with that old, and to all of us familiar, odor that we long since learned to believe was a necessary feature of the cow stable. I want to say that such conditions are altogether unnecessary and out of place. Reasonably sanitary conditions and practices will eliminate all such filthy conditions. When wood floors are used, conditions are even worse. To be at all sanitary a cow stable floor must be made of a material that is impenetrable to liquids, and so arranged that the solid and liquid manure may all be removed together.

Up to the present time there is nothing known to be better than cement or concrete. It is non-absorbent, durable, resists heat and cold, can be disinfected thoroly without injury, and if properly laid makes a comfortable place for cows to lie. It is hard, and on account of its being a non-conductor of heat is a little colder to the cow's body than wood or earth. If the surface where cows are to lie is slightly roughened when laid, by slightly sweeping just before the cement sets, or by leveling the surface with the edge of a board and not troweled or "floated," the surface will not be so smooth, and the litter will stay in place better, avoiding the cow's body coming in direct contact with the cement. She will not feel the discomfort of rapid conduction of heat from her body into the earth. I will take up floor plans and stall arrangements in a later issue.

HOLSTEIN-FRIESIAN ASSOCIATION MEETING

The 28th annual meeting of the Holstein-Friesian Association of America was held at Syracuse, June 2 and 3. The total registrations for the year increased 5,780 over the previous year, and 12,450 more transfers were made. The income from registrations and transfers was $99,758.75, and the total receipts of the secretary's office were $120,111.69; while the disbursements were $59,712.01. The total amount received in registration and transfer fees during the period of 19 years that the present secretary has been in office is $762,665.02.

The applications for membership in the association last year totaled 846, and the membership is now 5,129. The association is represented in about every state in the Union and in many foreign countries. British Columbia, Mexico, Cuba and Hawaii are on the list. New York stands first in membership, with a total of 1,681. There are now 74 local Holstein clubs in the country and 16 were organized last year. The Herd Book, which was published last year, contained the entries of 13,743 bulls and 23,493 cows. It cost $9,232 to print, and the postage alone on the volumes sent to members amounted to $1,108. Up to the present time the records of the association contain a total of 337,493 pedigrees, of which 117,631 are bulls and 219,862 are cows.

A radical change was made in the policy of the association in no longer confining the meetings of the society to New York. In recent years the Holstein industry has grown rapidly in the West, and the breeders of that section have been clamoring for recognition in having the association meet within their boundaries occasionally. Evidently the change had become necessary to prevent a division in the ranks of the Holstein breeders, so it was voted to re-incorporate the association under the laws of this state so that the charter would permit the holding of meetings outside the state. The entire country will be divided into three districts, west, south and east, and the meetings will be held alternately within some one of the states within the district limits. It will probably be held in Chicago next year. An amendment providing for the record in a separate division of the Advanced Register of yields of cows for a period of 12 months or less and certain other particulars, was referred to the board of officers with power to act.

Among the amendments adopted to the Advanced Registry rules was an important one relating to the withholding of all information of the progress of record tests until such tests have been completed. Strong denunciation of such procedure was made by speakers on the amendment which proposes to reform it. It is to the effect that when tests are being conducted which are equal to or higher than the previous highest recorded tests of either milk or fat, in any class, the facts are to be published weekly or as often as may be deemed necessary by the superintendent of Advanced Registry, for the benefit of all members of the association. This is intended to prevent the owner of the cow that is being tested from taking any undue advantage of the information which he possesses in order to buy up near relatives of the high-test animal before other members of the association are familiar with the circumstances.

Another important matter was the adoption of an amendment relative to the forfeiture of application fees after 12 months, providing the applicant has not complied with the rules for advanced registry. The fact is that there are now in possession of the society $4,500 in application fees that were sent in with incorrectly-made applications. Out of 9,300 applications, 2,300 had to be returned as improperly filled out, and so many of them were not returned by the applicant in correct form as to account for the $4,500 in the hands of the association. The amendment is to remedy this condition and to spur applicants to properly fill out their application forms, otherwise the fees shall revert to the association. The association voted to increase the amount of prize money for fairs and shows from $5,500 to $7,500.

The report of the superintendent of Advanced Registry, Malcolm H. Gardner, of Delavan, Wis., was a document of great interest to the Holstein breeders. There were 6,431 cows under test the past year, of which number 5,961 were in the seven consecutive-day tests, showing an average of 3.55 percent fat and an average production of 405.3 pounds of milk. The 356 animals in the semi-official tests produced in an average period of 346 days, 5,041,962.2 pounds of milk, containing 173,547.22 pounds of butter-fat, thus showing an average of 3.44 percent.

The so-called Blue Book of official records has been purchased from Secretary Houghton at the price of $7,500, and will hereafter be published from the office of the superintendent of Advanced Registry, and it will be combined with the Advanced Registry and be known as the Advanced Register Year Book. During the past year there were 4,426 original entries and 2,298 re-entries. The cash receipts of the office of superintendent of registry were $19,105.63 for the fiscal year.

The officers were re-elected, A. A. Hartshorn, of Hamilton, N. Y., being president; F. L. Houghton, of Brattleboro, Vt., secretary, and Wing R. Smith, of Syracuse, N. Y., treasurer.

PREVENTING WASTE OF CONDEMNED MILK

It is the custom of officials in many cities to condemn milk because of the failure of the milk dealers to comply with certain temperature standards. Usually this milk is disposed of by emptying it into the gutter, altho some attempts have been made to denature the milk by adding certain substances which would render it unfit for use in its fluid state. It is unfortunate that this milk, which is valuable for feeding farm animals, should be needlessly wasted. This loss can be prevented if the milk is returned to farms, where it can be utilized for feeding live stock. Condemned milk should also be used in the city for making casein and for other purposes.

The Dairy Division of the Bureau of Animal Husbandry, United States Department of Agriculture, has recently conducted some experiments in order to devise some practical method of denaturing milk so that its sale as market milk may be prevented and yet leave it in a condition suitable for feeding farm animals. The work thus far has proved that the use of a rennet solution is effective for this purpose at the usual temperature at which milk is condemned.

In these experiments a 3 percent water solution made from powdered rennet of a strength of 1 to 30,000 was used, and 40 cubic centimeters of this solution were added to 5-gallon cans of milk at different temperatures. The tests were made in a room where the temperature was 80 degrees Fahr., as that is about the temperature of the air in summer when most of the milk is condemned. In one test the rennet solution was added to a 5-gallon can of milk at a temperature of 50 degrees Fahr. In 1 hour and 15 minutes the milk was slightly thickened, its temperature then being 57 degrees. Thirty minutes later the temperature had reached 59 degrees and a soft curd formed. An equal amount of milk at an initial temperature of 65 degrees was treated at the same time. In 1 hour and 10 minutes the milk in this can was firmly coagulated, and it is probable that the rennet had produced the desired effect in much less time. At the end of this period the temperature had been raised only 1.3 degrees, or to 66.2 degrees Fahr.

In the light of these experiments it is believed that if a rennet solution of this strength is added to condemned market milk satisfactory results can be secured under ordinary conditions without the disadvantages of the other methods which have been tried. If a 3 percent solution is made from rennet, strength of 1 to 30,000, about 2½ ounces (80 cubic centimeters) of this solution will be required for a 10-gallon can of milk at a temperature of 55 degrees or higher. The cost of the material for this method of denaturing is very small, being only about three and one-third cents for a 10-gallon can when powdered rennet costs $7 a pound.

It is recommended that those who contemplate using this method should test their solutions in the laboratory before using them in practice, so as to know definitely the strength of each solution prepared.

LARGE COMPANY CHANGES NAME

The great Chicago House Wrecking Company, of Chicago, has recently changed to the name of the Harris Brothers' Company. The history of the growth and development of a great mercantile establishment is always of interest, but that of the Harris Brothers' Company is particularly so. The company was incorporated in 1893, and the following year it bought the complete World's Columbian Exposition. Under the name of the House Wrecking Company, it dismantled the exposition property, graded and classified all salable material and sold thru the mail order plan the great amount of material which might otherwise have been wasted. Its classification and representation of goods was so straightforward and reliable, and prices, in comparison with other similar goods, were so attractive, that the company sprang into instant popularity. It established a reputation as a price wrecker as well as a house wrecker.

Since that time it has purchased and similarly wrecked and disposed of the Trans Mississippi Exposition of Omaha, the Pan-American Exposition of Buffalo and the Louisiana Purchase Exposition of St. Louis. In this line, the goods handled were naturally confined largely to building materials. But because of the demand and popularity of the selling plan, it was later found necessary to increase this line by the addition of practically every known manufactured article, including plumbing, heating, hardware, machinery, paint, harness, sporting goods, groceries, furniture, floor coverings, roofing, fencing, clothing, etc. As most of this material was absolutely new and of high quality, the name House Wrecking Company became a misnomer. Because of this it became necessary to change the name to the Harris Brothers Company.

For years commanding offices in the company have been held by the four Harris brothers, so the change will not bring any material change in the policy of the company. It will continue to wreck large buildings and expositions and offer goods at price wrecking figures. Our readers will recall the offers made in advertisements in these columns. Future business will be conducted on the same liberal terms, but will be conducted over the name of the Harris Brothers' Company, instead of the old Chicago House Wrecking Company.

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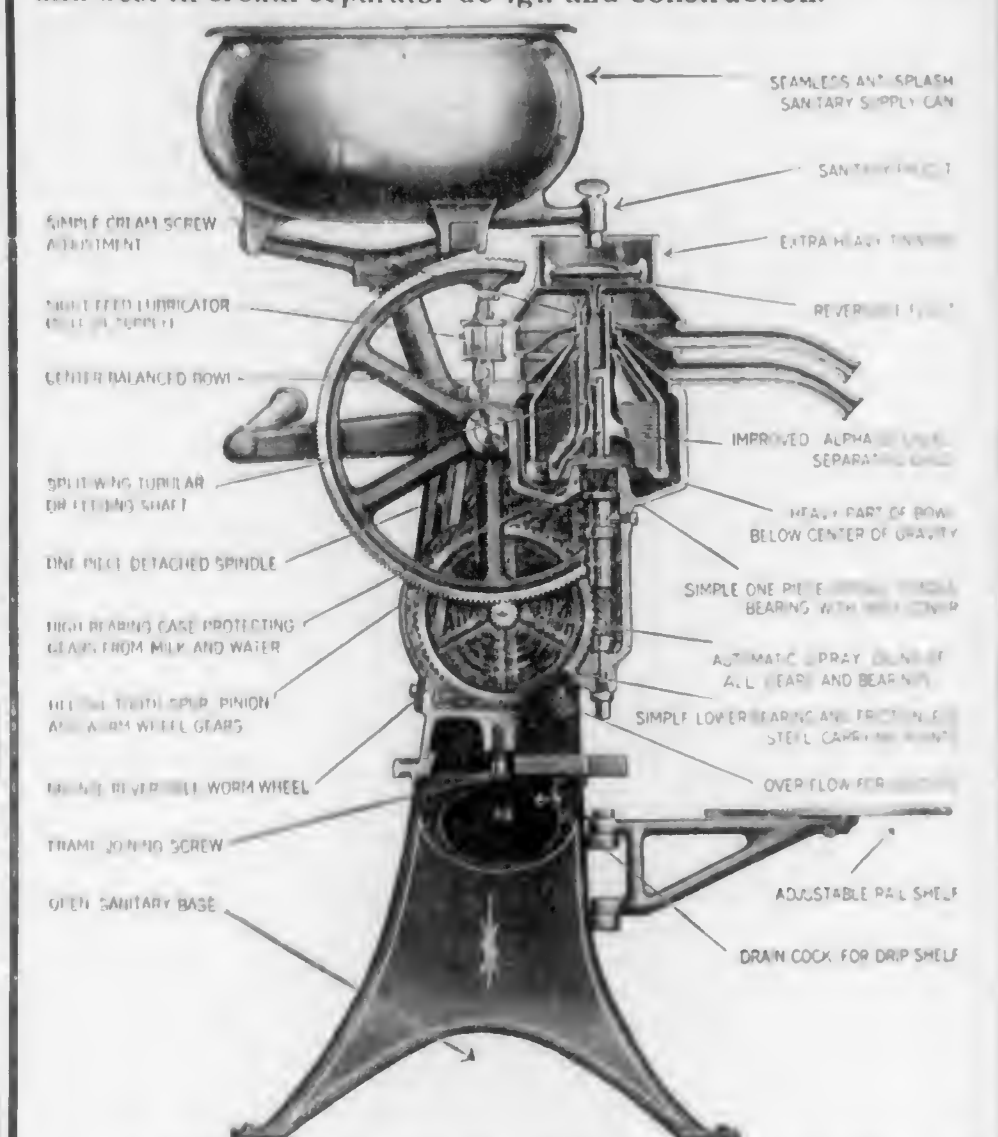
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Horticulture

HOW TO PRUNE RASPBERRIES

By Prof. W. J. Wright, New York School of Agriculture

Nature's object in producing fruit is to reproduce the plant. She is therefore especially interested in the seeds. Man, on the other hand, except in a very few cases, is most interested in the flesh part of the fruit. One of the objects in pruning, then, is to reduce the number of fruits the plant sets so that more of its energy may go into the production of the edible part. A small, seedless apple, for example, contains as many seeds as a large luscious one, but is far less palatable.

In pruning raspberries, therefore, one of the objects is to reduce the number of fruit buds. Another object is to keep the plant in the smallest possible space consistent with profitable production. Still another object is to destroy injurious insects and diseases with which the old canes may have become infested.

In pruning raspberries these principles should be kept in mind. First, the fruit is borne only on canes which grew the previous summer; second, old canes die as soon as they have once fruited and are a menace to the plant; third, black raspberries and red raspberries differ somewhat in their manner of growth and must be pruned accordingly.

Black Raspberries

Good strong black raspberry plants will send up several shoots or canes during the first summer. Only three of them should be allowed to grow, and as soon as they are 20 inches high the terminal bud should be pinched out. This causes it to stop growing and to produce branches which in turn will bear the fruit the following year. The second spring several shoots will again be sent up from the root. Four or five of the strongest of these should be allowed to grow and the others cut out. While these are growing the old canes will bear a small quantity of fruit. They should be cut out and burned immediately after they have finished fruiting. The tips of the new canes should be cut out as soon as they reach a height of 20 inches, as before. The third spring, if the branches from the canes have grown 20 or more inches in length, they should be pruned back to 18 inches. This will reduce the fruiting surface to what the plant can well mature and will also keep the plants in a manageable shape so that they may be more easily cultivated and the fruit more readily picked. If this method is followed regularly and the other operations of cultivation, etc., are faithfully performed, a good crop of large sized fruit of good quality should result.

In brief the operations are as follows: (1) Allow only the five strongest new canes to grow. (2) Cut out tops of new canes when they are 20 inches high. (3) Cut out and burn all old canes immediately after fruiting. (4) If the branches of the new canes grow longer than 18 or 20 inches, cut them back to 18 inches early in the spring.

Red Raspberries

Red raspberries have a tendency to throw up a much larger number of new canes or suckers than do black raspberries, and often at some distance from the parent plant. Cutting off the ends of new canes in midsummer increases this tendency. Moreover, the ends of red raspberries are often killed back during the winter. For this reason it is seldom wise to pinch out the terminal buds of the new canes during the summer, but they are cut back the following spring. The plants are naturally higher growers than are black raspberries, so that they are usually cut back to 30 instead of 20 inches. When so pruned they require no stakes — trellises, and hence much time, labor and expense are saved.

In brief the pruning schedule for red raspberries is as follows: (1) Keep down all new canes or suckers, except the five or six strongest ones in the vicinity of the parent plant. (2) Cut out and burn all old canes as soon as they are thru fruiting. (3) Cut back all canes to about 30 inches early in the spring and shorten lateral branches, if they have made a large growth, to about 18 inches.

THINNING THE APPLE

The most neglected and still without doubt one of the most profitable of all orchard operations is thinning.

We are all aware that many trees set a great many more fruits than they can properly mature, and if they are all allowed to remain on the tree nothing but an inferior article can be the result. Some who have never tried thinning do not believe that you can reduce the number and improve that which remains, while others realize that fact, but claim the cost is too great; they simply fail to look at the problem correctly. Thinning is certainly a matter of considerable expense, but the fruit is on the tree; it must be harvested at some time, and it costs less to harvest it when small than when mature, at which time it must be taken to the packing shed, sorted, and many then thrown away as culls. So as a matter of expense it amounts to very little.

When your trees are overloaded by all means thin the fruit as you will always find it profitable. By thinning you are able to produce a finer product, which always brings a higher price, and at the same time you are eliminating practically all culls, as the poor and injured fruits are all removed. Still more, we are conserving the energies of the tree, which is of vast importance. In many apple orchards we have what is known as the full and the off years, the one year the trees are loaded, the next they have practically nothing, which has led to the belief, by many, that apple trees do not bear every season. This is true to a certain extent with a few varieties, but in many cases it is due to the neglect of the owner. We find that on trees which are properly thinned, one spur produces fruit this year while another is storing up energy for its turn the following year and instead of a crop every second year, there is a crop each year. On trees which are not thinned, practically all of the spurs produce fruit in the full year, which so saps the energies of the tree that it is not able to properly develop its fruit buds and the next year it is barren.

In all fruit talks I tried to point out the great importance of quality, and you can only have quality in an apple which is of full size and color. This can never be secured upon a tree that is overloaded with fruit.

Begin thinning as soon the the fruits can be handled easily; say, when the size of a hickory nut. First remove all wormy or knotty fruits and then thin the remainder so that they shall be from six to eight inches apart. Altho these small green fruits may be removed by picking, you are very liable to break off many fruit spurs, and it is far better to use a small hand shears or even a good stout scissors, with which you can clip off the fruits very rapidly.

Finish thinning as quickly as possible, as the longer these surplus fruits are allowed to hang, the more energy they are sapping from the tree.—Sheldon W. Funk, Berks Co., Pa.

STOCK FROM WHICH BUDS AND CIONS ARE TAKEN FOR THE PROPOGATION OF TREES IN A NURSERY.

ORCHARD FERTILITY

The past season's bountiful fruit crop and its highly remunerative returns will prove an almost irresistible incentive to the fruit grower and general farmer to enlarge the area devoted to this (without doubt) the best paying of the great diversity of crops. While fruit growing is bound to become more of a specialty in this highly favored region, we certainly do not think it advisable for the average farmer to rush headlong into the fruit business to the exclusion of everything else, as such an extreme might possibly prove, in coming years, as disastrous to our resources as the production of cotton exclusively has proven to the south.

If, as has been claimed, that a 250 bushels per acre crop of apples will remove from the soil as much fertility as an average crop of wheat, it is plainly evident that fertility must, from time to time, as the growth of tree and production of fruit demand, be restored to the soil. As potassium, nitrogen and phosphorus are the elements of fertility most rapidly exhausted, these can be most cheaply restored to the soil by the application of stable manure, if the supply is adequate to the demands of the orchard in addition to those of the remainder of the farm. While these elements can be restored to the soil by application of the commercial forms, yet to rely upon them exclusively we do not think results would prove perfectly satisfactory, as under the clean culture method the soil would soon become practically destitute of humus, the great value of which as an aid in the conservation of soil moisture and in mechanically improving the condition of soils we should by no means under estimate.

As will prove the case with the average farmer, as he increases the area devoted to fruit, he decreases in the same ratio the area devoted to diversified farming, consequently the number of live stock and the quantity of manure manufactured, the annual application of which, with a short and judicious rotation of crops in which clover has figured most conspicuously, has been barely sufficient to maintain the fertility of the soil under a well managed system of diversified farming and live stock production or dairying.

The question presents itself, how is the fertility of these rapidly increasing areas devoted to fruit growing going to be maintained and added to? In many instances the land to be so utilized is a sand hill, the soil of which has become so depleted as to render its devotion to the ordinary field crops no longer profitable. By the thoro culture method as practiced by most successful growers, little or no opportunity is afforded to add humus and fertility by the growing and plowing under of crops, excepting as is afforded by the brief period of growth intervening the last cultivation and the end of the growing season, it is plainly to be seen that the fertilizing material will have to come from the balance of the farm—which will prove a "rob Peter to pay Paul process"—or the commercial forms will have to be used.

In our judgment the problem of the maintenance of soil fertility is to the fruit growers, as well as to the general farmer, a most vital one and demands our best thought and closest attention to every detail, for upon its proper solution depends as much as upon any other one essential, the future success of orchard growth and fruit production.

Indications are that there will be more fruit trees planted in most sections of this fruit belt the coming season than in any previous three. While it is encouraging to know that fruit growers and farmers are awakening to the great possibilities of fruit growing, it is apparent that many mistakes will be made in the planting of these new orchards, to avoid which we think the only safe plan for the amateur would be to consult some good, reliable authority as to kinds and varieties best suited to location, soil, market, etc.—Homer Shirley.

EXPERIMENTS WITH MUSKMELONS

According to experiments reported to the Department of Agriculture by the Illinois Station, there may be wide differences in the relative effects of different fertilizers for Gem cantaloupes in different seasons. Under the conditions of the experiments, however, it was found that manuring in the hill proved far superior to broadcast manuring, except where a very large amount of manure can be broadcasted. A large amount of manure used in the hills is conducive to the production of a large yield of early melons. Owing to the expense of the manure, however, from 2½ to 3 tons of manure per acre carefully applied to the hills may produce a greater net profit than 4½ to 12 tons per acre applied to the hills, or from 16 to 20 tons applied broadcast. The addition of raw rock phosphate to a moderate amount of manure in the hills may increase the yield of early melons, the total yield, and the net profits in the field planted crop. While the use of a complete fertilizer consisting of steamed bone, dried blood, and potassium phosphate, applied broadcast in addition to manuring in the hill will increase the total yield, the cost of such a fertilizer may render its use inadvisable. The application of the chemical fertilizer to the hills in place of manure is attended with great danger, especially to the field planted crop, where the yield may be greatly reduced as compared with no fertilizer treatment.

Horticultural Queries.

This department is conducted by Prof. H. A. Surface, State Economic Zoologist. Questions answered and timely and practical problems in treatment and control of farm and orchard pests discussed. Our readers are given the benefits of the advice of one of the foremost authorities in the country in this department. Address all queries to Pennsylvania Farmer, Philadelphia, Pa.

Cleaning a Boiler After Using Lime Sulfur Solution

I have just purchased a practically new farmers' boiler for butchering purposes, principally, but as that season is over, I should like to use the same for boiling the lime-sulfur wash. Kindly let me know if it can safely be used for lard and scrapple after boiling with lime and sulfur.

On account of the affinity existing between iron and sulfur, I thought perhaps the sulfur might permanently adhere to the cauldron.

If the boiler can be used for this dual purpose, please inform me as to how to clean it after using.—W. L., Penn's Park, Pa.

You can safely use your kettle for butchering purposes after you have used it for making the lime-sulfur solution, but it is important that it be cleaned soon after the lime-sulfur has been boiled in it, or it will rust and the interior will become roughened. It is a good plan to have a few old iron kettles for boiling the lime-sulfur solution, and you will not be obliged to bother with cleaning them absolutely.

In the case of the kettle you wish to use for lard and other purposes, you will have to scrub it with hot vinegar to get rid of the lime. Then grease it well and oil it, or apply grease to keep it from rusting. It may be possible that continued use in boiling the lime-sulfur solution may pit or roughen the surface of the kettle. This will not injure it, altho it will not increase its value for the special purpose for which you wish to use it.

The best thing possible for boiling lime-sulfur solution is to use a galvanized sheet iron box-shaped vat, like a cigar-box in shape. You can buy water tanks, ready made, that will just about serve the purpose you want, and by putting a hole at the one end near the bottom, you can insert a pipe and spigot to draw off the liquid, if you wish. A flat boiler of this kind over a stone or brick-walled furnace will boil this liquid nicely and last for years. It also should be kept fairly clean after you are thru with it each season, so that it will not rust out.

Soil Inoculation

Will you kindly inform me how to secure soil inoculation? Are the commercial cultures that are sent by mail satisfactory?—J. B. E. Crawfordsville, Pa.

I do not recommend a commercial method of inoculating your soil. The best way to inoculate is to get soil from some field that has grown the same kind of legume crop that you wish to grow, and scatter this lightly over yours just before seeding. Two hundred pounds to the acre will be sufficient. This is, of course, only for the legumes, or members of the pea, bean and clover family, and you should inoculate from soil in a field that has recently grown the same kinds of plants that you wish to grow on your own.

FRUIT TREES IN THE GARDEN

Farmers too often crowd fruit trees into their gardens to the detriment of their vegetables and bush fruits, and the practice should be discouraged. I have made the mistake myself. In our garden of half an acre I had altogether on the north and east sides, 14 peach trees; on the south side, three cherry trees, one peach and one plum tree; on the west side, one quince, one plum and three dwarf pear trees; thru the middle of the garden was a row of grape vines on a trellis. The consequence was that when all the trees had grown, and began to bear, I had to cut down the peach trees, or move the garden to some other place; or, more properly speaking, make our garden in some other place. Not only did the trees shade the vegetables, but their roots extended far out under and around them, and robbed them of fertility and moisture. In a dry time the trees, being the stronger, would seize upon the moisture, and the vegetables would suffer.

I had an onion bed on sloping ground, and when the onions were nearly full grown there came a heavy rainfall in the night and washed away the mellow earth of which the bed was composed without breaking their roots or washing them away. The sight was astonishing! I had never dreamed that onions had roots so long. They had spread out in every direction, and some were two feet long.

It has been stated that the roots of trees extend from the trunk about as far out in the earth as the limbs extend over it. The truth is they extend a great deal farther. I have seen forest trees growing along the river and creeks washed out by floods, and some of their roots looked like ropes, and were four times longer than any of their limbs.

There are grasses and weeds that will grow very well in a shade. I have seen celandine growing vigorously in places where it never saw the sun, but I never saw any garden vegetables or plants that would come to perfection in a shade. Some will endure a permanent eclipse better than others, but none that are valuable will flourish best when robbed of the sunlight.

Even apples and other fruits will not color well and have their luscious taste when too much shaded by limbs and leaves of the trees upon which they grow. Small fruits, like currants, gooseberries, raspberries and strawberries, may be grown in the garden without injury to the vegetables, and are convenient to the house for gathering.—J. W. Ingham, Tioga Co., Pa.

COMBATTING THE PEACH TREE BORER WITH ASPHALTUM

It has been found by the California Experiment Station that a thick, heavy coating of hard asphaltum, grades "C" and "D," prevents both the issuance and the entrance of about 95 to 98 percent of the peach tree borers, the degree of efficiency depending upon the thoroness of the application. Asphaltum does not penetrate, crack, deteriorate, or bind the tree, since it yields to the slightest pressure. Four years of experimenting have not shown the least injury.

PUBLIC HEARING ON GYPSY MOTH AND BROWN-TAIL MOTH

The United States Secretary of Agriculture deems it necessary to extend the present quarantine lines in New England to prevent the distribution of the gypsy moth and the brown-tail moth to sections outside of the New England States. A public hearing will be held at the Department of Agriculture, Washington, D. C., at 10 A. M., June 12, 1913, in order that all persons interested in the extension of these quarantine lines may be heard.

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The Dairy

THE COW BARN

By Dr. M. E. Conard, Chester Co., Pa.

There is probably no feature of dairy equipment that needs our attention more than the cow barn. First, because the profits of the dairy are regulated, to a very great extent, by the environment of the cow. Second, because the health of the consumer of dairy foods is more or less affected by the condition of the atmosphere in which the milk is exposed.

The profitable dairy cow is an artificially developed animal, whose vigor or vitality has been, by selection, breeding, housing and feeding, largely transposed from individual self-protection, or disease resisting ability, to the production of milk and butter, and we carry her energy away from her just as fast as we can coax her to give it to us in the shape of milk. Still we wonder why we have so much tuberculosis, abortion, milk fever (so called) and the like. We were not troubled that way years ago. Why should we be now? Such maladies as these are the natural and inevitable result of the proper development of the dairy cow, and it is our place, as intelligent dairymen, to compensate, so far as it is possible, to the cow for that which we have taken from her in the process of her development for our gain.

FARM HOME OF V. ROSS NICHODEMUS, BEDFORD CO., PA.

I think the stable in which she spends so much or her time contributes as much to her troubles as any other feature of her care, or neglect, as you choose. If it is too dark and no attention is paid to ventilation, as we generally find them in the older barns, there are in the stable many of the most fruitful causes for the presence of disease. Animals kept in such places become more favorable subjects for the attack, and have much less resistance. If we could only realize the advantage to be gained by admitting into our barns and our homes that God-given antiseptic and purifier, sunshine, the benefits would be more than we can imagine, and the effect for good would be far reaching.

In the construction of new barns it is not difficult to provide for sun light; but in many of the old, bank barns, so common in Pennsylvania, the chances for windows are not good. If they are so located and built that plenty of light can not be admitted, they are neither suitable or safe places to house the farmers' factory, and should be used for the storing of inanimate machines, and a better place provided for the dairy. The dairy is the farmer's factory, the efficiency of which measures his succes or failure.

Sunlight can generally be let in by opening the wall on the east and west sides, and the placing of plenty of windows there, leaving between them columns of foundation wall sufficient to support the building. There should be one-third of the east and west wall replaced by windows. The morning sun, during the stabling season, while the sun is low, will shine into the east windows, and as it passes around south it will gradually swing the patches of sunshine around over the floor until almost the entire floor has had a sun-bath and a pretty good disinfecting, to say nothing of the good effect it has had on the cows. The same thing occurs in the afternoon thru the west windows, which means that the entire floor has had a sun-bath and the greater portion of it gets two. The south windows are not quite so important, because at the time of day that the sun shines on the south side of the barn, it is so high that the shadows will not reach far into the stables. But there should be windows in the south also.

A convenient sized window is of twelve 8 x 10 lights, made in one sash and set on end. The sash is not fastened in the frames with hinges, but is just set loosely in the frames, so they can be removed easily to clean or to be substituted with a fly-screen. They can be fastened by means of buttons or little hooks. Such windows make fairly good ventilators, by dropping the sash into the stable at the top far enough to admit the desired amount of air. The air enters near the ceiling, where the inside air is warm, thus avoiding cold drafts directly on the backs of the animals. In small barns or long stables, where there are only two rows of cows, this arrangement of windows serves very well as a ventilating system, altho not as perfect as the King system. The ceiling and side walls should be tight, smooth and well covered with whitewash, making them unattractive to spiders and not offering places for dust to lodge. The whitewash intensifies the light.

The floor possesses many possibilities for good or evil, depending upon the material used and how constructed. As we generally find the earthen floor, with its excavated patches soaked with urine for years, I do not see how anything could be much worse for the health and comfort of the cattle. The urine-soaked earth is continually giving off a stinking, penetrating odor or gas, filling the stable air with that old, and to all of us familiar, odor that we long since learned to believe was a necessary feature of the cow stable. I want to say that such conditions are altogether unnecessary and out of place. Reasonably sanitary conditions and practices will eliminate all such filthy conditions. When wood floors are used, conditions are even worse. To be at all sanitary a cow stable floor must be made of a material that is impenetrable to liquids, and so arranged that the solid and liquid manure may all be removed together.

Up to the present time there is nothing known to be better than cement or concrete. It is non-absorbent, durable, resists heat and cold, can be disinfected thoroly without injury, and if properly laid makes a comfortable place for cows to lie. It is hard, and on account of its being a non-conductor of heat is a little colder to the cow's body than wood or earth. If the surface where cows are to lie is slightly roughened when laid, by slightly sweeping just before the cement sets, or by leveling the surface with the edge of a board and not troweled or "floated," the surface will not be so smooth, and the litter will stay in place better, avoiding the cow's body coming in direct contact with the cement. She will not feel the discomfort of rapid conduction of heat from her body into the earth. I will take up floor plans and stall arrangements in a later issue.

HOLSTEIN-FRIESIAN ASSOCIATION MEETING

The 28th annual meeting of the Holstein-Friesian Association of America was held at Syracuse, June 2 and 3. The total registrations for the year increased 5,780 over the previous year, and 12,450 more transfers were made. The income from registrations and transfers was $99,758.75, and the total receipts of the secretary's office were $120,111.69; while the disbursements were $59,712.01. The total amount received in registration and transfer fees during the period of 19 years that the present secretary has been in office is $762,665.02.

The applications for membership in the association last year totaled 846, and the membership is now 5,429. The association is represented in about every state in the Union and in many foreign countries. British Columbia, Mexico, Cuba and Hawaii are on the list. New York stands first in membership, with a total of 1,681. There are now 74 local Holstein clubs in the country and 16 were organized last year. The Herd Book, which was published last year, contained the entries of 13,743 bulls and 23,493 cows. It cost $9,232 to print, and the postage alone on the volumes sent to members amounted to $1,108. Up to the present time the records of the association contain a total of 337,493 pedigrees, of which 117,631 are bulls and 219,862 are cows.

A radical change was made in the policy of the association in no longer confining the meetings of the society to New York. In recent years the Holstein industry has grown rapidly in the West, and the breeders of that section have been clamoring for recognition in having the association meet within their boundaries occasionally. Evidently the change had become necessary to prevent a division in the ranks of the Holstein breeders, so it was voted to re-incorporate the association under the laws of this state so that the charter would permit the holding of meetings outside the state. The entire country will be divided into three districts, west, south and east, and the meetings will be held alternately within some one of the states within the district limits. It will probably be held in Chicago next year. An amendment providing for the record in a separate division of the Advanced Register of yields of cows for a period of 12 months or less and certain other particulars, was referred to the board of officers with power to act.

Among the amendments adopted to the Advanced Registry rules was an important one relating to the withholding of all information of the progress of record tests until such tests have been completed. Strong denunciation of such procedure was made by speakers on the amendment which proposes to reform it. It is to the effect that when tests are being conducted which are equal to or higher than the previous highest recorded tests of either milk or fat, in any class, the facts are to be published weekly or as often as may be deemed necessary by the superintendent of Advanced Registry, for the benefit of all members of the association. This is intended to prevent the owner of the cow that is being tested from taking any undue advantage of the information which he possesses in order to buy up near relatives of the high-test animal before other members of the association are familiar with the circumstances.

Another important matter was the adoption of an amendment relative to the forfeiture of application fees after 12 months, providing the applicant has not complied with the rules for advanced registry. The fact is that there are now in possession of the society $4,500 in application fees that were sent in with incorrectly-made applications. Out of 9,300 applications, 2,300 had to be returned as improperly filled out, and so many of them were not returned by the applicant in correct form as to account for the $4,500 in the hands of the association. The amendment is to remedy this condition and to spur applicants to properly fill out their application forms, otherwise the fees shall revert to the association. The association voted to increase the amount of prize money for fairs and shows from $5,500 to $7,500.

The report of the superintendent of Advanced Registry, Malcolm H. Gardner, of Delavan, Wis., was a document of great interest to the Holstein breeders. There were 6,431 cows under test the past year, of which number 5,961 were in the seven consecutive-day tests, showing an average of 3.55 percent fat and an average production of 405.3 pounds of milk. The 356 animals in the semi-official tests produced in an average period of 346 days, 5,041,-962.2 pounds of milk, containing 173,-547.22 pounds of butter-fat, thus showing an average of 3.44 percent.

The so-called Blue Book of official records has been purchased from Secretary Houghton at the price of $7,500, and will hereafter be published from the office of the superintendent of Advanced Registry, and it will be combined with the Advanced Registry and be known as the Advanced Register Year Book. During the past year there were 4,426 original entries and 2,298 re-entries. The cash receipts of the office of superintendent of registry were $19,105.63 for the fiscal year.

The officers were re-elected, A. A. Hartshorn, of Hamilton, N. Y., being president; F. L. Houghton, of Brattleboro, Vt., secretary, and Wing R. Smith, of Syracuse, N. Y., treasurer.

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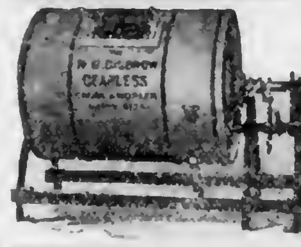

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PREVENTING WASTE OF CONDEMNED MILK

It is the custom of officials in many cities to condemn milk because of the failure of the milk dealers to comply with certain temperature standards. Usually this milk is disposed of by emptying it into the gutter, altho some attempts have been made to denature the milk by adding certain substances which would render it unfit for use in its fluid state. It is unfortunate that this milk, which is valuable for feeding farm animals, should be needlessly wasted. This loss can be prevented if the milk is returned to farms, where it can be utilized for feeding live stock. Condemned milk should also be used in the city for making casein and for other purposes.

The Dairy Division of the Bureau of Animal Husbandry, United States Department of Agriculture, has recently conducted some experiments in order to devise some practical method of denaturing milk so that its sale as market milk may be prevented and yet leave it in a condition suitable for feeding farm animals. The work thus far has proved that the use of a rennet solution is effective for this purpose at the usual temperature at which milk is condemned.

In these experiments a 3 percent water solution made from powdered rennet of a strength of 1 to 30,000 was used, and 40 cubic centimeters of this solution were added to 5-gallon cans of milk at different temperatures. The tests were made in a room where the temperature was 80 degrees Fahr., as that is about the temperature of the air in summer when most of the milk is condemned. In one test the rennet solution was added to a 5-gallon can of milk at a temperature of 50 degrees Fahr. In 1 hour and 15 minutes the milk was slightly thickened, its temperature then being 57 degrees. Thirty minutes later the temperature had reached 59 degrees and a soft curd formed. An equal amount of milk at an initial temperature of 65 degrees was treated at the same time. In 1 hour and 10 minutes the milk in this can was firmly coagulated, and it is probable that the rennet had produced the desired effect in much less time. At the end of this period the temperature had been raised only 1.3 degrees, or to 66.2 degrees Fahr.

In the light of these experiments it is believed that if a rennet solution of this strength is added to condemned market milk satisfactory results can be secured under ordinary conditions without the disadvantages of the other methods which have been tried. If a 3 percent solution is made from rennet, strength of 1 to 30,000, about 2½ ounces (80 cubic centimeters) of this solution will be required for a 10-gallon can of milk at a temperature of 55 degrees or higher. The cost of the material for this method of denaturing is very small, being only about three and one-third cents for a 10-gallon can when powdered rennet costs $7 a pound.

It is recommended that those who contemplate using this method should test their solutions in the laboratory before using them in practice, so as to know definitely the strength of each solution prepared.

LARGE COMPANY CHANGES NAME

The great Chicago House Wrecking Company, of Chicago, has recently changed to the name of the Harris Brothers' Company. The history of the growth and development of a great mercantile establishment is always of interest, but that of the Harris Brothers' Company is particularly so. The company was incorporated in 1893, and the following year it bought the complete World's Columbian Exposition. Under the name of the House Wrecking Company, it dismantled the exposition property, graded and classified all salable material and sold thru the mail order plan the great amount of material which might otherwise have been wasted. Its classification and representation of goods was so straightforward and reliable, and prices, in comparison with other similar goods, were so attractive, that the company sprang into instant popularity. It established a reputation as a price wrecker as well as a house wrecker.

Since that time it has purchased and similarly wrecked and disposed of the Trans Mississippi Exposition of Omaha, the Pan-American Exposition of Buffalo and the Louisiana Purchase Exposition of St. Louis. In this line, the goods handled were naturally confined largely to building materials. But because of the demand and popularity of the selling plan, it was later found necessary to increase this line by the addition of practically every known manufactured article, including plumbing, heating, hardware, machinery, paint, harness, sporting goods, groceries, furniture, floor coverings, roofing, fencing, clothing, etc. As most of this material was absolutely new and of high quality, the name House Wrecking Company became a misnomer. Because of this it became necessary to change the name to the Harris Brothers Company.

For years commanding offices in the company have been held by the four Harris brothers, so the change will not bring any material change in the policy of the company. It will continue to wreck large buildings and expositions, and offer goods at price-wrecking figures. Our readers will recall the offers made in advertisements in these columns. Future business will be conducted on the same liberal terms, but will be conducted over the name of the Harris Brothers' Company, instead of the old Chicago House Wrecking Company.

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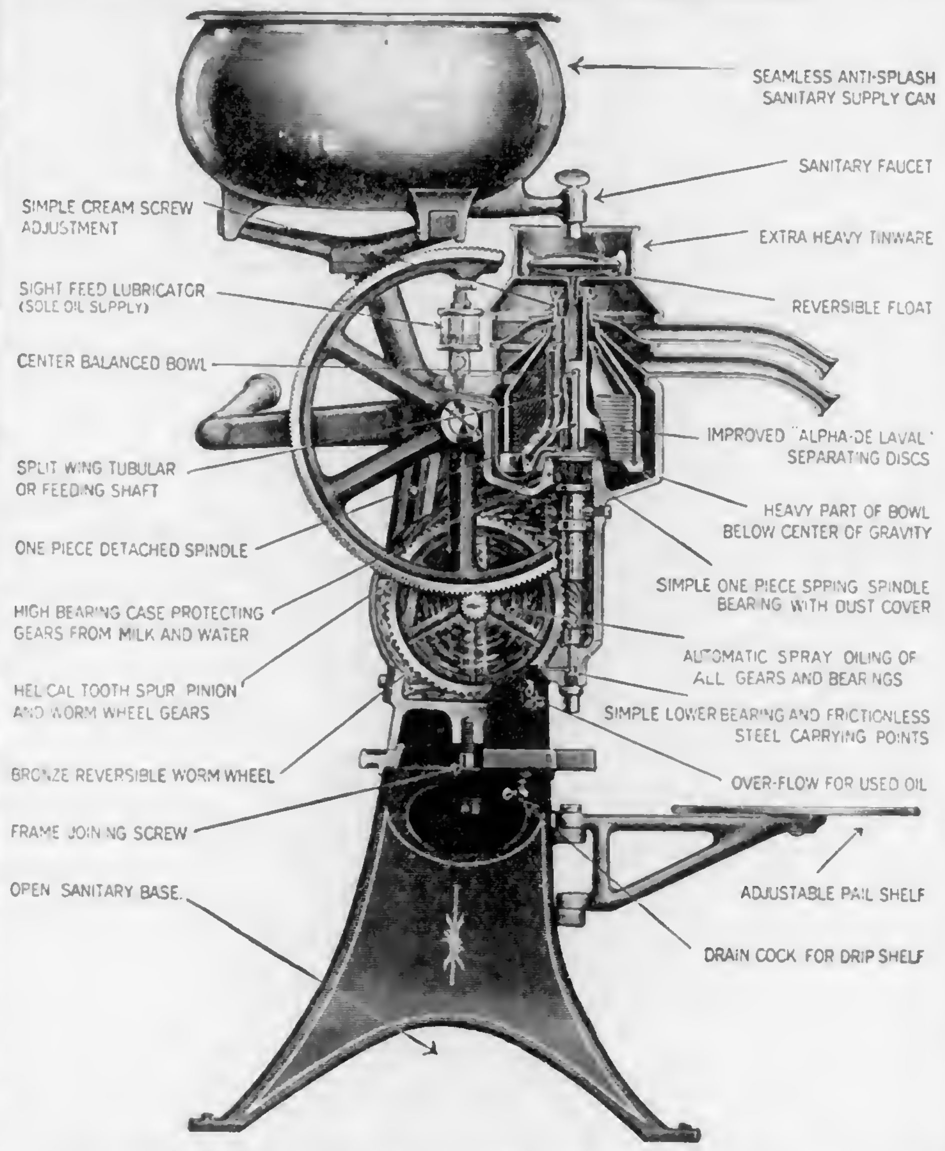
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Poultry

SOME VALUABLE HINTS IN THE PRODUCTION OF EXTRACTED HONEY

We do not usually extract any honey until the crop is at an end; about a week after the cessation of the honey flow is a good time to begin. On the evening previous to the extraction, we put on the bee-escapes, using the Porter, which has so far with us proven very good. These escapes are fitted into a tight honey-board with a bee-space both above and below, and this is put on by gently smoking the bees, lifting the supers and placing the escape-board between this super and the brood-chamber. The next morning there are but few bees left in any of the boxes. We have seen a few instances when there were no bees left, but this is the exception. With our method of leaving the honey on the hive until after the season closes before extracting, a large percent of it is sealed; in fact, many upper stories are full of honey that is sealed clear to the bottom bar.

Before we can extract the problem of uncapping confronts us; and it is no small matter, as it takes quite a long experience to acquire the knack of handling the uncapping knife so that results will be satisfactory. To uncap to the best advantage, the upper stories of honey should be stacked up so near the uncapping tank that one can stand in a good position to uncap and still be able to reach the honey without moving. We use only nine combs in a 10-frame upper story. With this wide spacing we get great combs of honey, and then we run our uncapping knife deep, cutting the comb clear down even with the frame, so that there are hardly ever any combs so uneven but what the knife will uncap them the first time over. This makes it possible to uncap much faster, and there are less combs to handle. Probably the worst mistake made in uncapping is in holding the comb at such an angle that the cappings, after being cut off, fall back on the comb, necessitating going all over the comb a second time to scrape off the loose cappings thus consuming more time than it took to uncap in the first place.

One would think that the shaving of the cappings from a comb would be done in quite the same way by different individuals, but there are about as many ways as there are men to do it. The proper way to hold a comb is to grasp the upper corner firmly between the thumb and fingers, allowing the lower corner furthest from the operator to rest upon the support. And this support is worth considering. A sharp-pointed wire nail makes a good support. The frame will not slip from it, and can be readily whirled around when necessary. If the comb is capped only half way down, one cut will do the job for that side; and be sure to hold the comb over at such an angle that the capping, as it leaves the knife, will drop into the capping can.

If the comb is completely capped it will take two strokes to a side. Many prefer to make both of these an upward cut. A very neat way practiced by some is to make one cut up on the far side, keeping the knife right along under the cappings across the top in a curve until the point of the knife is towards you, and then down, making a continuous cut from start to finish. It requires considerable practice to get this movement, but the wrist and the fingers can soon be trained to the accomplishment. Another method is to shave up one side and down the other. The downward shave requires a firm wrist and a quick eye.

Some operators allow the knife to dig into the comb and take off quite an amount of honey with the cappings. It is better to take a thin capping, unless dealing with an uneven comb. Where there are prominences and hollows, the operator should heroically shave down to an even thickness, and at the next extracting you will have a good crop to work with.

In order to get the most out of an extractor it really seems necessary for it to be of the reversing order, for many times while extracting new and fragile combs it is necessary to reverse before the honey is all thrown from one side; the weight of a comb against the wire-cloth of the basket will so indent it that it will break the comb to pieces unless the reversals are made often and the motion is moderate. It does not require as much experience to handle the extractor as it does the capping knife, and if the weather is warm, and the combs of even weight, everything will work smoothly; but, as it often happens, the conditions are not always this way. By watching the spray on the side of the extractor and occasionally lifting the combs, you can tell when you have turned long enough; and when you once get the knack, you will know without looking when they are done, almost the second the honey is all out.—F. G. Herman, Bergen Co., N. J.

HIVING A SWARM.

NO STINGLESS BEE PRODUCTION

An article going the rounds of the press makes a statement to the effect that a certain English beekeeper has produced a stingless bee by crossing a Cyprian drone and an Italian queen. State Zoologist H. A. Surface, who is the President of the Pennsylvania State Beekeepers' Association, says that he has kept Cyprian and Italian bees, as well as other varieties, in his apiary, and that he has produced this cross often enough to learn that the statements in the article in question are practically the opposite of the facts as he has observed them. He says that a cross with the Cyprian blood results in one of the most fiery of bees, which is so ill-tempered and stings so readily as to be out of the question for practical beekeeping purposes.

He speaks quite positively of the existence of stings in the Cyprian race of honey bees, and in all its crosses and relatives, and says that the sting is not only present, but that the bees know how to use it and are ready to do so with effect.

He has produced a strain of bees by this cross that is so cross that they pay no attention to smoke, but fly at and attack the operator, regardless of the amount of smoke that he pours upon them. He adds: "I am anxious to make the above statement for the benefit of the public, and to show that the article concerning the production of stingless bees by introducing Cyprian blood is certainly as misleading as it can well be made. I hope that our beekeepers will be instructed to pin their faith to the hard working and satisfactory strain of pure-blood Italians."

SOUR MILK SAVES CHICKS

One of the main causes of death among chicks is white diarrhea. This is very prevalent and investigations have shown conclusively that the original source is often from parent stock. Many chicks have the disease when hatched, and others contract it from them, thru feed and forage in infected litter or grounds. This transmission from chick to chicks is common during the first three or four days, and this is the period of great danger, especially among chicks of low vitality.

The symptoms are a whitish discharge from the vent, which results in "pasting up behind." The chicks become listless and sleepy, lose appetite, the feathers become ruffled, breathing labored, and they constantly peep or chirp. They may die suddenly or gradually waste away.

This disease is being most carefully investigated by the Agricultural Experiment Station at Storrs, Conn, and the third report of their investigations has been published. This report recommends the feeding of sour milk as the best thing to use for a preventive of this disease. It advocates feeding sour milk from the very first and keeping it before the chicks constantly. The acidity of the milk acts as a germacide. Moreover the milk is an animal product which chicks require in some form and it is a great factor in the growth and vigor of the young flock. Of course, the commercial chick feeds now so common are fed and pure water supplied, but in addition sour milk is kept before the chicks constantly, the vessels being cleaned and refilled daily during the first few weeks.

Farmers and poultry raisers should feed sour skim-milk constantly, at least after chicks are a few days old, as a preventive of this dread disease, and to stimulate their growth. It also increases egg production in the laying flock. Numerous experiments have demonstrated that skim-milk and curds, or cottage cheese, are among the most stimulating feeds for poultry of all kinds, except very young chicks. Many claim that sweet milk is much safer until the chicks are at least a week or 10 days old. There is a constant supply on nearly every farm, and it should be universally used for the farm flock. —N. E. Chapman, Poultry Specialist, University Farm, St. Paul.

WHAT ARE THE BEES WORTH?

It has been estimated that the annual production of honey in the United States amounts to the value of $20,000,000. But officials of the Bureau of Entomology, however, state that the production of honey is not the most valuable service that bees render, since their work in fertilizing the blossoms of fruit trees is worth many times $20,000,000 every year.

In many of the hot houses where garden truck is grown for the fancy winter trade, it has been found necessary to keep a hive of bees, simply for the purpose of pollinating the flowers and thus causing the "fruit" to set

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EDITOR'S NOTES AND COMMENTS

The Poet Confesses

"I hate a hoe, I hate a spade,
I hate the sod-knife's gleaming blade.
I never dig, I never sow,
I do not care to see things grow.
The farm, the lawn are not for me—
I like a swing beneath a tree.
Of rural joys I sweetly sing—
I'm just the bard who boosts the thing."

The chief reason that all men are not successful is the fact that they have not enough persistency. Do one thing well, throwing all your energies into it. The successful man, unlike the poet, is made, not born.—Wanamaker.

The courage to be just; the courage to be honest; the courage to resist temptation; the courage to do one's duty. This is the moral courage that characterizes the highest order of manhood and womanhood—it is the courage without which no great, permanent success in life is achieved.—Samuel Smiles.

The career of the farmer must be dignified, and the well-being of his family conserved; the farmer's standards of living, of intelligence and of happiness must be raised to those of other callings. The city has ignored the country. Now the time has come for the strengthening of country life which will mean the strengthening of the nation as a whole.—Secretary Houston.

CONDITIONS IN FARM LIFE

The man who handed me the clipping containing the stanza at the head of this column made the remark that he had no doubt the writer was at one time an over-worked and unappreciated farmer's son.

There it is again! I am getting tired of hearing the assertion so often made that farmers' sons and daughters leave the farm because they are over-worked and are denied privileges and opportunities for enjoyment.

Not long ago, I heard a speaker, born and bred in the city, rant for nearly an hour on this theme. He told the farmers of their cruelty in rousing their young people out of bed at four o'clock in the morning the year round; of forcing them to work from daylight until dark week in, week out; of their failure to provide amusements, recreations, music and reading matter; of their bare, cold, gloomy homes; of how they would give the boys calves, colts, pigs, etc., to care for until grown, then sell them away and pocket the proceeds! I admired the self-control of that intelligent audience, most of whom came from better homes and environment than did the speaker.

If the assertions of some of the would-be uplifters were only partially true, legislators would do well to investigate the subject of child labor in the country as well as in the cities. But they are not true. There are no doubt isolated cases, altho I have never known one personally; but to assert it as being the common practice is to slander a great class of people, and exhibits a woeful ignorance upon the part of the speaker or writer.

There are improvements needed to make country life and rural homes more enjoyable, and these improvements are being made. The much desired community spirit is developing. The social life of the country is improving sanely, if more slowly than in the city. Never before was there so much united effort put forth to build up the three great rural improvement institutions—the rural school, the country church and the grange or other farmers' organizations.

The unity of the family is better preserved in the country than it is in the city. Father and son are better acquainted. If they arise earlier in the morning, they also retire earlier at night—both desirable habits. The young people of the country have many privileges and pleasures that their city cousins can not have. The drudgery of farm life is over-emphasized. The work complained of is usually a blessing and not a curse. It is doing this work, performing regularly and faithfully certain tasks that develop those traits which enable the country-bred boy to win out over others.

In making this defense, I am not insensible of the defects which exist, but I do not believe that the boys and girls generally leave the farm because of these exactions and deficiencies. Some leave because they were born to other things; some from misconceptions, but most of them for economic reasons, because "Big Business" can pay bigger wages than the biggest business of all —farming.—R. P. Kester.

GOOD ROADS IN PENNSYLVANIA

One session of the three days' Annual Farmers' Institute and meeting of the State Board of Agriculture, held at Washington, Pa., was given to the question of good roads and the methods of paying for the same. Inasmuch as there is considerable public interest in the latter part of this question, we give below, without comment, some quotations from two of the most prominent speakers, Governor Tener and Senator Penrose.

Governor Tener said that the present administration, from the day of inauguration to the present, was pledged to a policy of permanent road improvement. There are about 90,000 miles of road in Pennsylvania, 8,000 miles of which are embraced in the present plan of permanent improvement. Concerning the proposed $50,000,000, he said it would be foolish to give complete control of the spending of all this sum into the hands of anyone at any time. Give only such sums as can be judiciously expended.

The kind of road to construct is the great question. He believes the time has come when we can build such roads as are practically everlasting; asphalt and stone, resting on a concrete foundation, for light traffic and easy grades; brick for heavy traffic, and the macadam road for general and ordinary traffic.

Federal Aid.—Senator Penrose, on being introduced to talk on the subject of federal aid in the building of roads, said that the federal government was interested in the subject of post roads, because the rapid extension of rural routes and the increase and extension of the parcel post made it a proper concern for the general government to have such roads built as will make it possible for the carriers to do their work. The following extracts from the address explain Senator Bourne's plan of federal aid in connection with state bond issues:

"Pennsylvania Participation.—Should the principal features of the Bourne plan be adopted Pennsylvania would receive $56,000,000 during a period from the federal government to be expended by the state in road construction, provided it complied with the conditions required by the federal government. These conditions are:

"First, Pennsylvania must have a highway commission; second, the constitution of the state must be amended so as to permit the issuance of bonds for roads; third, the total bonded indebtedness of the state, including highway bonds, must not exceed 10 percent of the assessed value of all the property in the state; fourth, the state would not receive from the federal government in any one year more than 20 percent of its allotment, or $11,300,000 maximum for any one year, with an aggregate maximum of $56,000,000 for any number of years; fifth, the state would have to issue, provided it decided to take its full quota, each year for five years, $11,500,000 of 50-year Pennsylvania 4 percent bonds, which it would deposit with the Treasurer of the United States as collateral, paying semi-annually into the United States Treasury 4 percent per annum on such bonds as it deposits.

"Bonds to Pay for Work.—Upon the deposit with the United States Treasury of Pennsylvania State bonds, the Secretary of the United States would offer for public sale at par an equivalent amount of federal 50-year non-taxable bonds, and the proceeds derived from the sale of same would be turned over to the State of Pennsylvania to be expended in road construction. If Pennsylvania took its full quota during the period of five years, it would receive the $56,000,000 and pay to the federal government $2,260,000 annually in interest charges for a period of 50 years, but at the end of 50 years the Pennsylvania bonds would be turned over to the state authorities marked "cancelled," without direct payment of the principal.

"Naturally, I assume, the thought occurs to many of you why should the great State of Pennsylvania pay to the government 4 percent per annum for the use of $56,000,000, when undoubtedly there would be periods in the money market when it might borrow money for 50 years on a 3 percent basis.

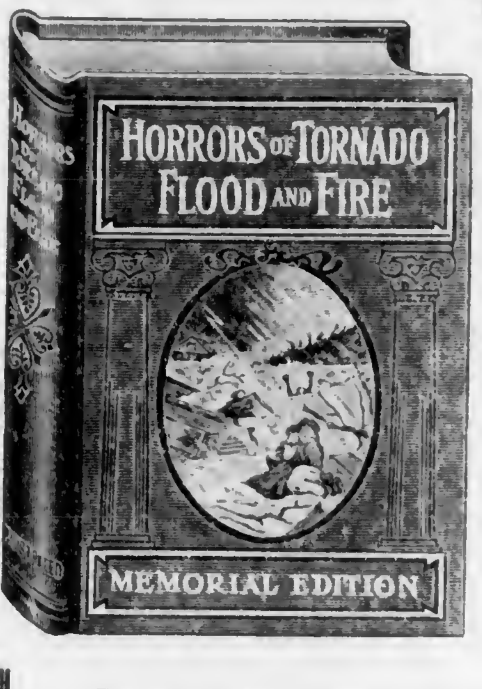
"Saving for State.—Under the Bourne plan, however, the state would pay the government in 50 years $113,000,000 in interest and have its bonds returned marked "canceled," thereby saving the state $28,250,000 as compared with what it would cost if it were able and did sell $56,500,000 of 50-year state bonds in the open market on a 3 percent basis. Again, under the Bourne plan, if Pennsylvania availed itself of the full quota of federal aid for road construction, it would thereby receive each year afterwards an annual federal donation of $1,130,000 for road maintenance, or a total of $56,500,000 in 50 years. The state would be required to make similar expenditures for maintenance purposes.

"While, as I have said, I am not prepared unqualifiedly to indorse in its entirety Mr. Bourne's plan for federal aid, there is one feature of it that appeals to me as being sound and desirable. If we provide for a bond issue the bonds should be in small denominations and should be sold at par by popular subscription, with allotments prorated among small subscribers, so that the small investor would have an equal opportunity with the man of wealth."

E. E. Jones representative from Susquehanna County, and father of the Jones Road Law, made a plea for a continued improvement of the dirt roads and of a sufficient appropriation to carry the provisions of the Jones law into effect. He called attention to the inequalities of the present tax laws, and showed that, with a fair apportionment, there would be plenty of money. By a recent law, $175 is appropriated so that the road supervisors of every county may hold conventions to learn about road buildings; the money to be used in paying the expenses of road building experts in attending such county meetings.

NEW JERSEY SUMMER SCHOOL

New Jersey State College (Rutgers) announces a Summer School for teachers and others, to be held from June 30 to August 8, 1913. The purpose of the school is to give instruction to those who desire training for work in rural schools, primary, intermediate and grammar school work. Courses are offered for those who are preparing to teach agriculture. Tuition is free. A registration fee of $5 will be charged students in the state; $10 for non-resident students. Catalog and full particulars will be mailed free upon request to Prof. K. C. Davis, Principal Summer School, New Brunswick, N. J.



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PENNSYLVANIA FARMER, 214 South 12th Street, Philadelphia, Pa.

PENNSYLVANIA FARMER
AGRICULTURE THE KEYSTONE OF NATIONAL PROSPERITY
ESTABLISHED 1880 PUBLISHED WEEKLY

Established 1880. Published Every Saturday.
Entered as second-class matter at the postoffice at Philadelphia, Penna.

The Lawrence Publishing Co., Proprietors
M. J. LAWRENCE..............President
M. L. LAWRENCE..........Vice-President
P. T. LAWRENCE......Secretary-Treasurer

NEFF LAING..................Manager

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General Office
214-216-218 South 12th St., Philadelphia, Pa.

Branch Offices For Advertising Only
Cleveland, O., 1011-1015 Oregon Ave.
New York City, 41 Park Row.
Chicago, Ill., 600-604 Advertising Bldg.
Detroit, Mich., 39-45 Congress St., W.

TERMS OF SUBSCRIPTION
One Year 52 copies to one person $0.50
Two Years 104 " " " " $1.00
Three Years 156 " " " " $1.25
Five Years 260 " " " " $2.00

Always send money by draft, postoffice or express money order or registered letter. We will not be responsible for cash sent in letters unless registered. Address all communications to, and make all drafts, checks and postoffice and express orders payable to The Lawrence Publishing Company, Philadelphia, Penna.

RATES OF ADVERTISING
15 cents per agate-line measurement, or $2.10 per inch (14 lines per inch) each insertion.
No advertisement inserted for less than 45 cents per insertion.
No deceptive, immoral or swindling advertisements inserted at any price.

Philadelphia, Pa., June 14, 1913.

A GREAT FARMERS' FIELD DAY

State College Excursions

Thursday, June 5, was Farmers' Field Day at State College. The Pennsylvania Railway Company ran low-rate excursions from various parts of the state, and over 1,600 farmers and farmers' wives took advantage of the opportunity to visit the one state institution which is maintained specifically for their benefit, and to study at first hand the work of their College of Agriculture and Experiment Station. Thirty-two railway coaches, run in three sections, brought the crowds in at about 12 o'clock, and the entire afternoon, under ideal weather conditions, was spent in an inspection of the grounds, buildings and equipment. State College is a mighty busy institution at all seasons of the school year, but it is doubtful if Dean Watts and his helpers have ever experienced a busier, more inspiring or a more delightful afternoon than was given them in entertaining this crowd of interested visitors.

Luncheon was served immediately after each train load arrived, and opportunity was given for all the visitors to stir around and rid themselves of the travel kinks before starting on the trip over the farms. The beautiful campus never looked better. It is one of the real beauty spots of the state, and it was in just the right setting, with the freshness of its spring verdure, for a real show day. The farms and experimental plats, too, were in just the right stage of growth to carry their lessons to the visitors. No better season could have been found for a comparative study of the many interesting and instructive problems which are being worked out on these plats.

After lunch the crowd was divided, one portion making a tour of the buildings and campus, while the other started on a trip over the farms. Wagons were provided, and all rode in comfort over the 800 acres devoted to all of the staple crops of the state. The first stop on the outward trip was made at the intersection of a field of wheat and one of clover, where the farm superintendent, C. L. Goodling, pointed out what has been accomplished by the use of commercial fertilizers, lime and rotation methods in bringing up a run-down farm. Starting three years ago with a farm so poor that its owner did not harvest the corn because the crop would not justify the cost, the Station authorities have brought it up so that the present crop of clover is an excellent stand, and experienced farmers in the crowd estimated the present promise of wheat at from 25 to 30 bushels per acre. The farm is being run in a three-year rotation of corn, wheat and clover, and the visitors were able to draw most conclusive and lasting conclusions from the present appearance of the wheat and clover.

The second stop was made at a pasture field, where Prof. B. O. Severson exhibited a drove of beef cattle which is being developed on the Station farms. Questions on the advisability and comparative profits in cattle raising in the East, and the comparative value of various feeds in fattening cattle are being worked out in this herd. The visitors had the animals before them, and were able to follow the professor's remarks and observe the evidence of his results, and it is a safe conclusion that many of them returned to their homes with a renewed interest in cattle raising and cattle feeding for our eastern farms.

In reaching the pasture, the crowds passed the Station orchards and were given an opportunity to view results in growth and vigor of trees from different methods of treatment. Dr. J. P. Stewart then outlined the work being done, and pointed out the practical features of the tests. These include studies in effect of the mulch as well as the cultural methods of growing, both being compared with no cultivation, which is still too prevalent thruout the state; studies in fertilization, both as to amounts and composition of applications; practical value of various methods of pruning, budding, etc. The details of the work are all available in published bulletins. Some of the visitors may have read the bulletins, and no doubt many more still have them filed carefully away where they expect to read them "some day"; but here they had the evidence before them and could read as they rode.

Continuing, the party next visited what was probably the most popular and interesting plat on exhibit. It was a field of clover growing on what is known as a natural limestone soil. In the ordinary conception of the properties of such soils, lime would be a needless extravagance as an application to stimulate plant growth. Still the test of theory is in its application, and the Station authorities had made the test. The bulk of the field had been given an application of a complete fertilizer, and the crop promises to be a very poor one. But in one part of the field seven plats had been laid out. The treatment of these plats, as described by Mr. Goodling, and the production found by the visitors were as follows:

Plat No. 1, nothing applied, and very little clover, but many weeds and daisies growing. Plat No. 2, the equivalent of 1,000 pounds of lime applied, a splendid crop of clover growing. Plat No. 3, 1,000 pounds of lime and 150 pounds of complete fertilizer applied, a good crop of clover growing, but not noticeably better than on Plat No. 2. Plat No. 4, nothing applied, little growing. Plat No. 5, 1,000 pounds of lime and 250 pounds of fertilizer applied, good crop, but apparently no better than Plats 2 and 3. Plat No. 6, 250 pounds of complete fertilizer applied, crop little if any better than on Plats 1 and 4. Plat No. 7, nothing applied, crop very similar to Plats 1, 4 and 6.

The difference in the appearance of these plats was so marked that the division stakes marking boundaries were unnecessary, but, as one visitor observed, it might be found necessary to set stakes to mark the swaths when mowing the unlimed plats. Two features in this demonstration proved particularly attractive to the crowds. First, it threw light on the subject of liming, and when anyone talks lime to Pennsylvania farmers, he is handling a mighty lively subject. Second, the test was so simple and so extremely practical. There was nothing connected with it which any farmer present could not do or could not afford to do; and it answered the question absolutely. Soil tests and years of discouraging crops suggest a number of remedies. Actual plat tests demonstrate and leave nothing to guess work. If the farmers caught the full lesson of that one demonstration and went home with the determination to make similar tests on their own farms, they will pay the full costs of their trip many times over.

The first section of the crowd then returned to the campus for an inspection of the buildings, while the second section was taken over the fields. Inspection of the buildings started with the greenhouses, where the visitors saw the work being done in forcing vegetables. The forcing season is practically closed, but there was enough evidence of the active season just past to interest and instruct. A feature here which caught the eye as well as the ambition of the young men with a longing for a college education was the evidence of the practical work done this season by the present junior class in horticulture. Seedling vegetables were grown in these greenhouses last winter by the students, hardened off early in the spring, and as soon as conditions were right, were planted in class plats in the field. These class plats are just across a road from the greenhouses, and were in excellent growth to give the visitors an idea of the practical value of such work to the students. This is one of the many examples of real farming done by the students; a "seeking for the laws of God" in the soil, plants and trees, which a modern and keen-witted novelist tells us is more dignified, more elevating and altogether more commendable than "seeking for the secrets of Satan in a lawsuit." The novelist was making a plea for more scientific farmers and fewer lawyers, and such demonstrations as the young men found at State College are a powerful incentive to answer that plea.

From the greenhouses the crowds passed on to the dairy building, inspecting the modern creamery, cheese factory, sampling the ice cream and drawing inspiration from the story of how this plant has been developed from a poorly-equipped class laboratory to a self-sustaining and profit-making commercial enterprise, being a milk gathering station for the surrounding territory, and manufacturing these products for sale in the neighboring markets and being a live, every-day example of how to manage a dairy establishment and how to get best profits by producing best products. Those who were interested and had the time also visited the dairy herds and saw the high-producing animals developed by selection and right breeding, made productive by right handling and judicious feeding, all housed in a building which, in its original construction, is no better than can be found on practically any farm of the state. In addition to such ideas and inspirations for better dairying which the visitors must have carried home, they must also have carried away the conviction that their state has not been sufficiently liberal in its appropriations when so important a department of this institution is compelled to labor under the handicaps of such poor stable equipment.

From the dairy department the crowds scattered to the various other buildings. They went thru the main agricultural building, viewed the respiration calorimeter, visited the forestry building, inspected the various class rooms and laboratories, and passed on to the famous fertilizer plats on the Experiment Station. All thru the buildings they observed the methods and apparatus for "teaching by doing," which is a predominating feature of this institution. At the experimental plats they saw the demonstrated lessons of 32 years of experimentation in the soil and crop questions which are of first importance today. The nature and detail of these lessons are too complex and numerous to be described, and to be fully appreciated must be seen as they were seen by the visiting crowds.

By this time the visitors had covered ground and done a day's work that would have completely exhausted the ordinary city sightseers. But these people were accustomed to real work, and the crowds that gathered to meet the departing trains were a cheerful and happy lot. They were tired with the early travel, the rides and the walks over the farms and plats, but they were enjoying an outing, and the holiday spirit so plainly evident was a stimulant to tired bodies and aching feet. As we viewed that departing crowd we could not but compare it with similar crowds which we have seen leaving the circus tents, the ball grounds, the pleasure parks or other places catering solely to the amusement and entertainment of their visitors. Here was a crowd that was different. The sense of pure enjoyment of a holiday was keener, fresher and more spontaneous. The mere pleasure of the occasion was tempered with a serious interest in the meaning of the various sights of the day. The event was not a placing of pleasure before business, or business before pleasure, but a happy mixture of pleasure and business, with all of the temporary diversion of the former mingling with the solid, substantial worth of the latter. It was a crowd that had treated itself to a day of diversion and sightseeing, and had found the treat satisfying.

Was the trip worth while? I walked thru the dairy stables with a young man who had gotten up at four o'clock that morning to get there. He was building up a dairy and was interested in cows and dairy equipment. He was picking up ideas at every turn. His eyes shone as he told me of how he could use this or that idea at home. As he put these things together, he could see that old home farm growing in productiveness and profit. I have no doubt that he saw a complete plant turning out the best market milk to be produced, and himself the prosperous possessor of it. Were these air castles to be shattered and forgotten? Perhaps so, but he had the fun of building them, and has gained a new inspiration from their ephemeral existence. But we do not believe they were air castles. They were rather ideals to be retained as a goal of accomplishment. He had established a purpose, and he had caught a large number of ideas which were to help him in attaining it. Was this worth while? And then remember that he was but one in a crowd of 1,600 seeing the same sights and hearing the same talks. He was not the only one to catch a glimpse of the blue sky ahead—A. J. A.

PENNSYLVANIA LEGISLATIVE NEWS

Liability Bill in Conference.—As was forecasted in this letter, the workmen's compensation, or employers' liability bill, as it is called, has been sent to committee of conference. This committee is to hold the first of its meetings during this week, but it is regarded on "the Hill" as very doubtful if an agreement will be reached for a fortnight at the very least. The senate declined to recede from the amendment to make the law optional with the employer and the employe,

and the house refused, without dissenting vote, to concur in the amendment. This amendment is the sole point of difference and the basis of numerous arguments. The mandatory provision, as passed by the house, would make it apply to every person employing another, except for casual work, altho the employe is allowed to elect whether he or she cares to work under the law. Pronounced opposition by small manufacturers and farmers, evidenced by numerous letters from granges, caused the senate to stand against the mandatory provision. Foreseeing a deadlock, numerous suggestions have been made to compromise, one being to make the law mandatory upon employers of say from 1,000 persons upwards, and elective with employers of less than 1,000. This would relieve farmers and small manufacturers. It is proposed to permit establishment of companies for insuring employers against compensatory damages on the mutual plan, but it is pointed out that this would merely add the burden of a fixed charge to those who desired to be on the safe side. The administration is taking a position that the mandatory provision is essential if party pledges are to be kept, but the effect of the law is so sweeping that it is rising above the realm of politics, in which, as a matter of fact, it has no place.

Appropriations Cause Trouble.—The free and easy method of voting appropriations which has characterized this session bids fair to see trouble in the house. Objection is made to the manner in which money has been recommended to various projects and charities, and an organized fight is being made on the administration thru the appropriations for conduct of state government. The highway department is the main object of attack, but the opponents of the administration have required the agricultural and allied departments to subject themselves to scrutiny and to take the defensive in regard to their requests for increased appropriations. Thus among resolutions for information as to reasons for increases and for accounting for expenditures of the last year and a half, the farmers' institutes, supervisory work over cattle feeds, fertilizers, orchards and food and drink have been brought into question. The requests for information coming so late in the session have raised some doubt as to the value of delayed efforts in saving money for the people.

Educational Bills.—Another fight has been started against the voting of state money to higher educational institutions, such as the Universities of Pennsylvania and Pittsburgh. No attack has been made as yet on State College, but it may come along. Anything is possible in this house. The proposition of those who are fighting such appropriations is that the state should adopt a policy of limitation of its educational appropriations, it being suggested that State College and three other institutions be selected and definite grants be made biennially, each to encourage some particular feature of education. Under this plan State College, it was suggested, should devote itself to agricultural education in preference to others. However, it is not regarded as likely that the proposed limitation will become effective this year, but it is part of a plan to make appropriations on a definite basis and to abandon the happy go lucky methods of the past years. When this is accomplished, it is probable that there will be some steps to systematize the charitable appropriations which are a fruitful field for study.

The Child Labor Bill.—Next to election law changes, which no one seems to be able to keep track of, and which will be tied up in conference committees for a while, the child labor bill, also amended in the senate, appears to be attracting attention. The bill contains a provision which exempts the farm, canning of food products and homes from operation of the acts, saying, the term "establishment" when used in this act shall mean any place within this commonwealth where work is done for compensation of any sort to whomever payable except a farm, and the canning of food products and private home. No one under 14 can work in any establishment, and for those between 16 and 18, certain occupations are outlined, and no minor can work in a saloon. The hours, which are a bone of contention, are 50 hours per week, arrangements being made so that in rush seasons in stores minors may work.

Live Stock Bill Out Again.—House Bill No. 1010, which is to establish a new law for the control of live stock diseases, is out of the senate committee and bids fair to pass. The bill will give the state board wider powers, and in the main the features are much as they passed the house.

Township Road Act.—The township road act is now out of committee and on its way. It provides that the county road superintendent of the state shall act as the advisor of supervisors in expending money payable by the state, and by a system of inspection obtain better results for the outlay. However, it contains one feature which is likely to cause trouble in that it permits officials to sell stone and other materials to districts. The township act is designed to be accompanied by a substantial appropriation to permit improvement of the dirt roads, state supervision being provided as a means of halting ill-advised improvements.

General Water Survey Next.—The governor's plan for a general survey of all water resources of the state is favored in the legislature, and if it goes thru this work will be done in every section. It will show not only how much water can be depended upon, but also the extent of water power untaken in Pennsylvania, a very important matter for the future.—Hamilton, Harrisburg, Pa., June 9.

NEW YORK LETTER

Butter in Storage.—The report of 40 associated storehouses in New York shows that there were, on June 1, 8,098,300 pounds of butter in storage as against 4,769,000 at the same time last year. It is estimated that 6,985,000 pounds were put in storage during the month of May, of which about 1,200,000 pounds went to the warehouses of the New York district. On June 1, there were 2,265,000 cases of eggs in storage in the warehouses.

Great Food Waste.—The health commissioner of New York estimates that 24,000,000 pounds of food are wasted every year in New York City alone. The statement is based on authoritative figures just compiled. Add to this the loss in the same way for all other cities and the total would be appalling. Is there any wonder that the cost of living is so high? That the loss is largely due to improper methods o[illegible]ation and handling [illegible]issioner, by the fact [illegible]nds of food stuffs were destroyed by the health department last year as unfit for human consumption.

Rural Life Conference.—About one week will be devoted to the rural life conference at Syracuse University early in July. Many phases of the general subject will be up for discussion by experts. Prof. E. C. Howe has the conference in charge.

Holstein Breeders Go West.—It was not without a struggle that the forces of the Holstein-Friesian Association from the West prevailed at the recent meeting in Syracuse and got the charter amended so as to permit the holding of meetings outside this state. Some strenuous speeches were made against the change, but they were no more so than those in favor of it. On the whole, we think it will be good for the association and Holstein breeders generally.—New Yorker.

MARYLAND NOTES

Scarcity of Berry Pickers.—Every year, at strawberry time, there is a great demand for "pickers," as country help is scarce. Thousands go from Baltimore to the great strawberry sections to pick berries. Anne Arundel growers send big wagons to the city and carry whole families to their farms. This year they have had much trouble with the pickers. Federalsburg, Caroline County, had to increase its police force by five to preserve order nights. The great influx of Bohemians, Italians and Negroes as pickers and factory hands gave the little town quite a cosmopolitan appearance.

Fruit Prospects and Prices.—In one section where between 15 and 20 carloads of strawberries were shipped a day last week, the Gandys brought $4 and the others $1.60, $1.90 and $2.22 a crate. According to the opinions of a number of leading fruit growers in the peach growing district of Edgemont and Smithburg, where they expected from 500,000 to 600,000 baskets, it is estimated that the yield will be only about 75,000 baskets. It is also claimed that there will be about one-fifth of the usual apple crop in this district.

New Creamery.—Centreville now has an up-to-date creamery, having just installed the latest piece of machinery used in butter making, a pasteurizer. It is expected that this creamery will soon cause the many large farms in the county to become conspicuous as dairy farms.

Army Worm Damage.—The army worm has commenced an invasion in Kent County. On June 6, on a farm near Black's Station, they were discovered in an 85-acre wheat field, which had been stripped of every blade. The worms then passed thru a 5-acre field of corn, leaving it bare of vegetation. Furrows were plowed and soon filled with the pests. Fields adjoining the farm were also attacked.—G. O. B.

COUNTY NOTES

Crawford Co., Pa. (N. W.), June 6.—Weather cold; light frost June 5. Too dry and cold for most crops, especially pasture. Veal, 8½c, live; eggs, 18c; butter, 30c; potatoes, 50c; hogs, 8c. Work quite well along. Corn and potatoes coming slow; look bad. Meadows are light for this time of season.—J. F. Seavy.

Armstrong Co., Pa. (S. W.), June 6.—Warm during day, cool at night; some rain. Cattle scarce. Good to choice, $8.40@8.55; No. 1 timothy, $15.25@15.75; lettuce, 10c lb.; potatoes, $1, old, retail; tomato plants, 10c doz.; oats, 50c; wheat, 90c. Work well advanced. Corn held back on account of cool nights. Cabbage badly damaged by maggot. Fruit nearly all killed.—Arthur R. Allshouse.

Montgomery Co., N. Y. (E. C.), June 4.—Weather cold from May 7 to June 1. Showers and warmer. Cheese, 13¼c@14c; butter, lower; eggs, 19@20c; hay, 16. Beef and pork very scarce and high. All crops somewhat backward on account of continued cold. Fruit crop will be extremely light. Bad spring for little chicks. Some farmers just planting corn and making garden. Grange planning for a big outing.—John L. England.

Venango Co., Pa. (N. W.), June 2.—May was cold and dry, with several frosts. Live stock looking good. On account of the frosts crops have not advanced as they should. Much fruit destroyed by frosts. Butter, 30c lb.; eggs, 25c doz.; potatoes, 60c bu.; apples, $1 bu.; hay, $14 ton; wool, 15c lb. On account of dry weather farm work is well along. General conditions are not very satisfactory at this time.—W. J. Pringle.

Luzerne Co., Pa. (E. C.), June 3.—Weather fair with local showers. Live stock scarce. Wheat and rye looking good. Clover and timothy looking fairly good. Wheat, $1; corn, 60c; rye, 75c; potatoes, 90c; oats, 50c. timothy hay, $18. Farm work advancing fairly well. Little cultivating being done so far.—N. C. Brown.

York Co., Pa. (S. E.), June 4.—Warm with plenty of rainfall. Fat steers selling for 7½@8c lb.; cows scarce and high; wheat, $1.02 bu.; corn, 63c bu.; potatoes, 50c bu.; hay, $15 ton; butter, 33@36c lb.; eggs, 16c doz.; strawberries, 10@12c box. Farmers are busy cultivating corn, planting tobacco and doing some small chores about the farm.—Clarance D. Emig.

Lancaster Co., Pa. (S. E.), June 4.—Warm and fair at present. May was cold and wet. Cows are doing well in the pastures. Good cows sell high. Potatoes and corn are growing nicely now since the weather is warmer. Very little if any corn replanted. Wheat promises a heavy crop. Grass fields are fair. Clover crop will not be as heavy as last year. Oats look good. Some tobacco planted. Fruit was damaged somewhat by frost during May. Farmers are harrowing corn and getting tobacco patches in shape. General conditions are about the average.—J. Henry Haverstick.

Juniata Co., Pa. (C.), May 31.—Cool with frequent rains. Live stock in good condition. Pastures good. All crops growing well except corn, which is well set but needs more sunshine. Cows scarce and high in price, $50@70; sheep, 4c; lambs, 7½c, live wt.; wheat, $1.10; corn ,75c; oats, 40c; butter, 32c; eggs, 18c. Corn and potatoes all planted. Promise of good wheat and hay crops. Farm labor scarce. Wages good, $1 to $1.50 per day.—D. B. Esh.

Warren Co., Pa. (N. W.), May 31.—Cool and wet. Live stock looking well and high. Some teams selling from $600 to $750. Grass very short. Oats looking good but short. Corn not all in yet. Help of all kinds very scarce.—Clyde Firth.

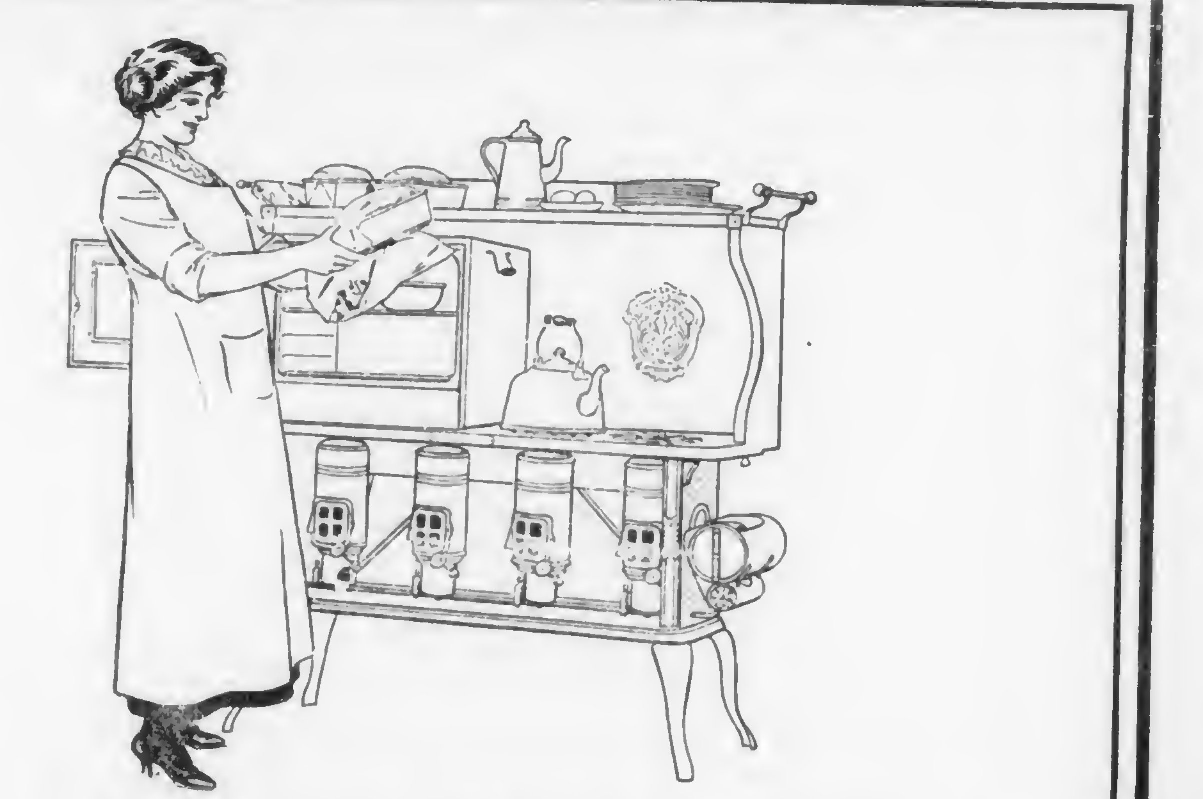
Chester Co., Pa. (S. E.), June 3.—Weather cool and damp. Beef is high; milch cows scarce. Potatoes, $1 bu.; milk, $1.35 per cwt.; hay, $14. Grass is backward. Garden seed has rotted in ground. Whole fields of corn had to be replanted because of the heavy rain. Fruit is very poor. Potatoes have rotted and are being replanted.—Hayes C. Taylor.

Steuben Co., N. Y. (S. W.), June 2.—Weather is fine. Frequent showers keep crops growing. Cows are doing well; pastures are good. Prospects bid fair for a full crop of hay. Potato planting about done; acreage about normal. Not much corn planted this season. Work is a little behind on most farms; it has been very cold. Butter, 27c; eggs, 19c.—G. W. Rowley.

Chautauqua Co., N. Y. (S. W.), June 2.—Showery and cool. Horses high, $150 to $250; cows, $50 to $75; pigs, $4 each. Crops looking fairly well. Fair outlook for fruit. Hay selling for $15 at barn. Mill feed $1.40; meal, $1.45; bran, $1.35; oats, 46c; wheat, $1.20; potatoes, 60@75c. Work generally well along. Too cold for corn; many pieces not coming up and will have to be replanted. Early potatoes looking well, as is all grain. Winter wheat is fair.—J. L. Barber.

Wayne Co., Pa. (N. E.), June 2.—Cool but very pleasant. Live stock in pastures and doing fine. Oats and peas looking fine. Prices very good. Farm work kept up in fine shape. Land rolling and hilly and some stony.—E. W. Carl.

Northumberland Co., Pa. (C.), May 31.—Lots of rain last week and rather cool. All live stock scarce and high. Butter, 30c; eggs, 18c; veal, 8c; wheat $1; old potatoes, 45c and scarce. Grass is good. Wheat will be bumper crop. Corn all up. Oats in bad shape on account of wet weather after all had sowed. Many farmers are now plowing for buckwheat. No corn yet cultivated.—George A. Hockley.



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MUTILATED TEXT

The Daughter of David Kerr

By HARRY KING TOOTLE.

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PRECEDING CHAPTERS

The city of Belmont is a typical middle-western village, under the rule of the political "boss," David Kerr. The daughter, Gloria, had spent her girlhood away from home and knew nothing of her father's profession or business affairs. Supposing him to be a wealthy real estate merchant and a leader in Belmont society, she came home to take her place in the best circles of the town. To gratify her wish and continue the deception, David Kerr secretly secured the services of Judge Gilbert to introduce and assist Gloria in establishing herself in society. In return Kerr promised to give the full weight of his political influence to secure the passage of a questionable street railway franchise, the money coming from such influence going to Gilbert. Joe Wright, recent purchaser and editor of the Belmont News, met Gloria while traveling abroad. He had fallen in love with her before he was aware that she is the daughter of David Kerr. Since coming to Belmont he found that it was necessary to oppose the "boss" thru the News, and he took up the fight on the street railway franchise, the very measure which was purchasing the services of Judge Gilbert in Gloria's behalf. The opposition of the News threatened the success of the franchise project and the defeat of the ring in the approaching election. To save the "machine" and his political friends, Kerr decided to purchase the News. Just previous to the interview Gloria promised to become Wright's wife. Knowing that Gloria was still ignorant of her father's real character, Wright refused to sell out, and warned Mr. Kerr that he would push the fight to the limit. Seeing a copy of the News containing a denunciation of her father, Gloria drew the hasty conclusion that Wright was an impostor and slanderer, and she broke her engagement with him. She then plunged into settlement work and her first acquaintance in the slums was Little Ella.

CHAPTER XVII (Concluded)

Ella showed her disgust for a woman who would so easily give up the man she loved.

"I left home. So, you see, I've loved more'n you've ever loved," she cried. "You didn't really love." There was scorn in her voice as she spoke. "I've gone thru fire an' storm ter the man I loved, because I loved a real man. You must 'a' loved some kid at the ribbon counter. A real man wouldn't 'a' let you give him up."

This was a tribute to the animal perfection of the graceful young creature before her. The sight of Gloria as something to be desired, to be possessed, made Little Ella feel that no man with red blood in his veins would give her up without a fight. She hated her for her masses of beautiful hair, her deep, soulful eyes, her complexion of apple blossoms, and her delicate white hands. She hated her for her svelte, girlish figure and her beautiful clothes which brought out her best lines. A woman may be down in the world, but she has eyes to see.

"Look at me," she cried, beating her flat breasts with her red, bony hands. "A man died fer me—an' he thought I was worth it. Did you love a man well enough for him to do that fer you?"

Gloria could only avoid the question by tactlessly referring to Little Ella's present state.

"You don't know what you're saying. Can't you see what he's brought you to?"

"Don't you say a word against him," snapped the sick woman. "All men ain't alike, neither. It wasn't his fault I'm here. It's the system."

"The system! What's that?"

Here was the introduction of a new element. Gloria's curiosity was aroused. There was something inexorable about it, to judge from Little Ella's manner of speaking.

"Well, call it society, if you want to," conceded society's victim.

"What do you mean?"

"Say, are you stringin' me, or was you born yestiddy?"

She laughed harshly at the humor of such a question.

"I don't understand," was all Gloria could reply.

CHAPTER XVIII

Gloria had not been reared without an understanding of the various layers of society. Of those close to her own station in life she had an intimate and intelligent knowledge, but as she went down the scale her acquaintanceship grew slighter and her understanding more vague. The poor creatures whom as a class Little Ella now represented to her were almost as foreign and as misunderstood as would be a lama of Thibet. Having no knowledge, she could have no real pity.

Gloria had never dreamed, even when she tried to put the worst possible construction on what few things she knew, that the world could be so cruel. Never for an instant had she thought it was possible for men whom she regarded as upright and honorable to be engaged directly or indirectly in exploiting vice and ignorance. It had never occurred to her that men whom she might know, some of them, owned dreary blocks of hovels and tenements from which high rents were secured only because the people who lived in them were not respectable. Poor and honest tenants could have paid but poor and precarious rents.

As Little Ella told her story of the "system" at Gloria's request, her voice grew shriller and shriller as the indictment grew graver. She talked rapidly, sometimes turning aside from the direct channel of her revelation, to explore some little eddy of a specific instance which made her account a reality. Gloria could have credited something to exaggeration had it not been that just at the moment she thought the girl was beginning to draw on her imagination some incident would be introduced suddenly to make the whole thing ghastly real.

For the first time the daughter of David Kerr learned of the peddlers of showy dresses, the venders of cheap perfumery, the stealthy disseminators of cocaine, and the many other leeches that fatten on the unfortunate of the underworld. She learned that all the misery was but a monument to human greed. Nothing was exploited in which there was not a profit of three or four hundred percent. Nothing was exploited which did not tend to kill the finer feelings, reducing the poor victims in time to the level of brutes.

"And the men down here," Little Ella cried, the memory of the good, wholesome men whom she had known in her earlier life coming back to smite her. "poor ignorant excuses fer men, most of 'em—all they're good fer is to steal an' lie an' live off us women, an' vote the way the boss tells 'em on 'lection day. An' who's responsible fer that? Say? " Gloria could make no reply, and Ella, whose pause had been rhetorical, uncouth as she was, made answer herself. "I know. The fine gentlemen what buys the votes. An' when they needs more money fer more votes they send the p'lice 'round, an' we has to pay, always pay."

"I never dreamed of such a thing."

"I tol' you you didn't know. Why, oncet I was good like you, too. An' now," she began to sob—"now—I'm down—an' I can't git up. I can't git up. It's too late."

Suddenly Gloria remembered the power to which she would appeal. Where a minute before had been darkness and uncertainty was now the clearness of a summer day.

"It's never too late," she insisted. "Remember, I'm not alone. My father will help me. He's brave and good and strong, with a heart of gold. I can't change the world's ways, maybe, but I can do something to make Belmont better with my father's help—and yours."

Gloria was a doughty Crusader, and was eager to plunge at once into the work of reform. She was going to permit her father to be a ways and means committee, but she intended to have a thoro grasp of the whole situation herself.

"Why do you pay this—this blackmail?" Gloria demanded.

"I've got to live. What else can I do—now? I'm down, an' in debt."

"But they can't keep you from living."

"They can send me to the workhouse." And at the thought Little Ella shuddered.

"Whom does this money go to? I want to get that part of it absolutely straight so I can tell father."

"It goes to the boss, of course."

Little Ella made this statement in a matter-of-fact manner. The methods of the "system" were so notorious that she did not have to think a moment before giving her answer.

The boss. Here was a factor in the game of which Gloria as yet had had no inkling. The boss. What does he do Now she desired to know about this boss.

"The boss?" Both the tone of her question and the look on her face denoted her interrogation.

"Yes, the boss gits the money." Little Ella saw that it would be necessary for her to explain. "I thought everybody in Belmont knowed that. I gives it to Noonan mostly, but sometimes the round-sergeant collects, an' sometimes they both do."

This double collection wasn't on the square, but what was she to do? If she complained, she knew too well what would happen to her.

"Who's Noonan?"

"Mike Noonan! He runs the saloon downstairs, an' rents me this room. He gits a rake-off from 'most everybody down here."

"He must be a rich man."

"Oh, some—but he's got to pass a lot of it on."

"And you say the police know about this?"

Little Ella looked at her in amazement. To Gloria a policeman was a stalwart individual with white gloves who halted traffic while she crossed the avenue. To the other a policeman was an enemy, a grafter who never overlooked an opportunity to feather his own nest or line his own pocketbook. The best that she ever could say for any one of them was that he was an autocratic rowdy. Gloria's simplicity in asking if the police knew of this tribute caused her to reply:

"They ought to—they git some of it. Then the man higher up gits his."

"I can't believe it. When you get well I want you to come and tell my father all this. He is—he's an influential man. I'm sure he'll help you. He shall help you," she added decisively, " and every poor, unhappy person down here, because I shall tell him to."

Little Ella looked at her, all admiration for such power.

"Gee! I wisht I had a pa like yourn," was all that she could say.

"He can't know that such things are happening here every day in Belmont."

"If he did, I reckon he wouldn't tell you." Little Ella was more conversant with the ways of the world.

"And what did you say finally becomes of this money you have to pay?"

"The boss gits it."

"Oh, yes. This boss—who is he? What does he do to earn this money?"

"That's what he gits fer pertectin' us. He keeps the police from juggin' us."

"And if you don't pay?"

"He gives 'em the tip an' we're sent up for thirty days."

This didn't accord with Gloria's idea of law and justice. Here was a man who, without authority and as his whim dictated, arrested people because they would not do something unlawful. And the police, instead of being instruments of the law, were under the direction of this boss.

"Can't the law touch him?" she asked.

"Huh! He's the law in this town."

"Do you mean to tell me there is a man so base," demanded the daughter of David Kerr indignantly, "This boss, that spends his time collecting this money?"

Little Ella had come to realize soon after they had met that she was dealing with a fledgling. Hence she bore with her and answered her questions patiently.

"Gosh! Little time he spends collecting money down here." Her tone indicated clearly that he spent no time at all. "What's the cops fer? What's Mike Noonan fer? He's got other things to do himself. I oncet knowed a young lawyer, an' he tol' me the boss got his from the big gamblin' houses, an' the street car comp'ny, an' the 'lectric light company, an' big things like that."

"Then you're just a drop in the bucket." The magnitude of the "system" was just beginning to dawn on Gloria. She now saw that its ramifications were many, that there must be much that even this woman, for all her knowledge, could know little of. While she could not learn all from Little Ella, she could learn enough to make her father investigate.

"There's enough of us drops in Belmont to fill a pretty big bucket," the girl admitted. "Gimme a drink o' water, will you? I never was so dry at a Dutch picnic."

Gloria poured a glass of water for her. Then, feeling that she had not been considerate in asking the girl to tax her little strength by the recital of a story that sadly wasted her vital energy, she begged her to rest.

"You're still a bit feverish. Lie down now and rest. Try to go to sleep, and I'll sit here and read."

Soon her patient seemed to sleep, and Gloria picked up a book and tried to read. The revelations to which she had listened made all possibility of concentration upon the printed page out of the question. Suddenly it occurred to her that she did not know the boss's name. Just as this came into her mind the girl turned restlessly and opened her eyes. Finding that she was awake, Gloria asked:

"Tell me, what's the name of the boss?"

"Eh? What?" Little Ella was not thoroly awake.

"What's the name of the boss? I want to tell father."

"His name? Oh, it's Kerr. He's ol' Dave Kerr. Ever hear of him?"

Having aroused herself sufficiently to answer the question, Little Ella sank again into a doze.

As for Gloria, it almost seemed that the words meant nothing at all. So slowly did her mind accept this intelligence that the fall of the book unnoticed to the floor did not seem related in point [illegible]. Yet in fact it told that her n[illegible] ...tent upon one question: W[illegible] boss of Belmont?

"Kerr! K[illegible] still rang in her ears. "The boss? David Kerr? I wonder what relation—." The very ignominy of the thought restrained her. "No, no, no. It's all a mistake. It can't be— I couldn't believe it. There can't be any relation of my father's—my fa— It's absurd. It would be maddening, the suspicion of such a thing. Why, my father's the soul of honor."

Without warning, Joe Wright came into her mind; Joe Wright, her evil genius.

"What did the paper say? 'The king of underhand manipulators, David Kerr!' The king! She muttered aloud, and clapped her hand over her mouth at the word. The thought of such a thing widened her eyes with terror and set her heart to beating high with sudden fear. "But not this, O God! Not this."

She repeated the pathetic words of Little Ella.

"'There's enough of us drops in Belmont to fill a pretty big bucket,—oh, it can't be my father! It can't be my father—He has a daughter—It's all a horrid mistake. There must be another David Kerr, I'm sure."

Gloria sprang from her chair and seized the sleeping woman roughly by the arm.

"Listen to me. Tell me something more of David Kerr."

She shook Little Ella into a conscious state and repeated the question.

"Which David Kerr is it?"

"There's only one I know of," answered Ella. "He's got a real estate office on Fifth Street."

"What!"

The net of circumstance was being drawn tighter and tighter about one man, and that man her father.

"Are you sure he's the man, girl?"

Gloria asked the question in as subdued a manner as possible. Suddenly she had become afraid. She did not wish to arouse suspicion.

"Sure, he's the man." It tried one's patience to be roused from sleep, and then to meet with contradiction was enough to make one petulant. To settle the question so that she could go back to sleep, Little Ella added:

"Look on my bureau and you'll see a program of the Dave Kerr Demmycratic Club Ball."

Gloria walked over to the bureau with its jumble of odds and ends, and began to turn over the things mechanically.

"No, not that. Look behind that phtygraft. That's it. That's his picture on the front."

Gloria gave one look. The picture was that of her father.

For a time Little Ella chattered drowsily, but Gloria did not hear. She was prostrated by a grief that numbed her every faculty. The foundation of her faith had been swept away.

What she beheld seemed to burn itself into her brain. On the cover of the program were the words: "Annual Ball. David Kerr Democratic Club." and the picture of her father. It was the truth; her father was the boss of Belmont. So different was her position from that pinnacle on which she had thought herself to be that the whole world would have to go thru a revolutionary orientation. There was nothing in her life which would not have to be adjusted anew because of this revelation.

As she turned the pages of the program, pages filled with liquor and saloon advertisements, her thoughts were all of herself. Resentment and anger there were, directed toward her father, but now in the fir[illegible]ents when she saw herself as [illegible] saw her, humiliation conquere[illegible] her emotions. Her first [illegible] Wright was [illegible]th from her. [illegible] sick at heart.

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comparative feeling was out of the question because she was completely crushed, but she saw as in a book that had been written and laid away as finished, the sacrifice he had made for her, the supreme renunciation he had made because he would not denounce her father before her.

The thought of how different her home-coming had been from what she had planned made her laugh hysterically. Then when she recalled the few staunch friends she had made she clutched wildly at the hope that after all it was untrue.

"It's a lie, every word of it, a lie his enemies invent. What big man but has his envious wasps that prick and sting? Judge Gilbert, Mr. Kendall, Dr. Hayes, they'll all say that he—Joe Wright! What of him? What will he say?"

She put this man that loved her in one balance and the other men in the other. He outweighed them all, and the momentary hope was gone. She could see it all now. As the baffling attitude of Belmont revealed itself to her bit by bit she buried her face in har arms and sobbed.

"And I was so proud, oh, so proud!" moaned the daughter of David Kerr. "Joe Joe! You did love me!—I sent him away, and I never understood. Now I can see it all. The social lights—the cold disdain I could not understand—the whispers that died away before they reached my ears—all, all, all because I was David Kerr's daughter. David Kerr, the boss of Belmont."

Her father's name exercised a fascination over her. Again and again she repeated it, her lips curling with scorn.

"David Kerr, the boss of Belmont!" she cried with a contempt that wrung her heart. "David Kerr, the king of underhand manipulators! David Kerr, the man these wretched women look to for protection—and pay him for it!"

This new thought was a poisoned arrow that sank into her heart. As she dwelt upon it her eyes fell upon her handsome tailored coat and her beautiful hat she had laid aside.

"And with the money these unhappy creatures pay, he—he—God in Heaven! Where did the money come from for these clothes I wear? What shall I do? All these years, and I never knew!"

Where the money came from to pay for her handsome clothes wracked her as poignantly as would a great physical pain. Her thoughts were incoherent, skipping from one horrid phase of the situation to another. Tho they were disconnected, they were not vague Each was a ruthless view of her deplorable position.

"Why did he let me come home! How can I bear to have anyone look at me on the street? I can hear them now saying, 'That's she, the boss's daughter. See her fine clothes. We know where the money came from to buy them.' And I, like a leper, must ever cry, 'Unclean, unclean,' and see those whom I would love flee ever on before me."

This made her think again of Joe Wright. Surely he had loved her beyond all reason to have wished to marry her, the daughter of such a man.

"Joe, poor old Joe, how he has suffered because of me." She had chosen in her blindness not to listen to him and he was gone forever. She had obeyed the dictation of pride and stifled the prompting of love, and now her punishment seemed greater than she could bear. "He did love me. He knew, and still loved me. And I drove him away. Well, it was better so; but he did love me—once. It's better so—for him."

It was now a far more grievous prospect than that of the long years which had confronted her when she had realized the previous day how solitary was to be her way. Then she had had position, power, and pride; now these had been stripped from her, and nothing had been given in their stead. In a passionate flood of tears she sank to the floor and cried as if her heart would break.

Thru it all Little Ella slept, not knowing that in her room was being enacted a tragedy of the heart more profound than any she with all her shallowness could live in a century of heartaches.

CHAPTER XIX

Grief made Gloria insensible to the flight of time, and how long she had been prostrate on the floor before sounds on the stairs aroused her she did not know. Thinking that it must be Mrs. Hayes returning with a physician, she rose hastily and tried to remove all traces of her tears. She wished above all to avoid explanations, and if none was asked she did not wish to have her grief misconstrued. But it was not Mrs. Hayes, for Gloria could hear the heavy tread ascending to the floor above.

Little Ella was restless and rolled and tossed in her sleep. The daughter of David Kerr looked with pity upon her. Her discipline was too new, her spirit was still too untamed for her to understand fully the kinship of the human race. Altho she recognized that she was herself without the caste she thought was hers, she had not come to know that on the last great day there would be only the judgment of the just and the unjust, not of the high and the low, of the rich and the poor, of the wise and the ignorant, of the master and the servant.

"Poor girl," murmured Gloria, "you shall see that I do understand."

There was also much which she could learn from this bit of flotsam cast up by an unkind sea upon a cheerless shore. Seeing that Little Ella was not sleeping soundly, her desire to know more got the better of her duty as a nurse. She shook her gently, and soon was rewarded by seeing her eyes open.

"What do you want?" asked the patient.

"Time to take your medicine," Gloria answered unblushingly. This was only a subterfuge, and it hurt her to receive the profuse thanks which it evoked.

"How are we going to begin to make things right down here?" Gloria asked when Little Ella had sunk back upon her pillow.

"Begin?" The girl did not understands.

"Yes, you and I. Things can't go on as they are."

"Why, begin with the boss, of course."

Gloria could not have been stabbed by a more cruel reply.

"Ah, yes," she sighed, "but how?"

"That's up to you and yer pa."

Little Ella recognized that the boss was out of her sphere of influence.

"Yes, yes, I know. Tell me—does—David Kerr," she spoke the name with an effort, "ever—come down here?"

"Him! Naw. We never see nothin' o' him" His daughter gave a sigh of relief. "We don' know nothin' 'bout him much. We don't see him, but we feel him. He lives alone, out in the country."

"Then can he really know?"

"He's a man, ain't he?" demanded the woman of the streets fiercely. "He knows, but what does he care? I wisht he had a daughter."

"What's that?" Gloria asked. The manner in which Little Ella had spoken made her catch her breath with a feeling that was akin to dread.

"I wisht he had a daughter, an' that she'd have to suffer what we down here suffer."

Gloria held up her hand, bidding her cease from even thinking of such a thing.

"No, no, no, not that."

"Why not?" the other went on doggedly. "Could she be any better'n I was oncet? I tell you, I'd like to have a daughter of his here, and watch her struggle to keep the breath in her body.

"Have you no mercy?" begged Gloria.

"What mercy hev I had shown me by Noonan—'cept fer his own profit? What mercy from David Kerr? Wouldn't he laugh to see a daughter o' his in this hell-hole?" Gloria convulsively covered her eyes with her hands as if to shut out even the thought of such a sight. Little Ella went on harshly, "What a joke it would be! But I'd laugh. I'd watch her, the little darling, to see that she paid the price as I've done."

Gloria could stand it no longer.

"Stop, you senseless girl. You make a mockery of pity and compassion. It's absurd to vent your rage upon something that doesn't exist. David Kerr has no daughter."

Little Ella accepted this answer without question, unmindful that a short while before her visitor had denied all knowledge of the man.

"I wisht he had," she said regretfully.

A door slammed suddenly overhead.

"Aren't you afraid here alone?" Gloria asked.

"Naw. I ain't scared in the daytime, an' at night I'm out most o' the time."

The sound of a scuffle on the floor above brought both women to attention. There came a sudden, smothered cry for help which made Gloria's blood run cold. Then there was a heavy thud as if someone had been felled by a blow.

"What's it all about?" she cried, springing to her feet in terror.

"Nothin'. Stay where you' are. We're safe as long as we don't open that door."

The sounds of the affray grew louder. Again came that cry for help.

"What's going on? I must know. Someone's in trouble. Didn't you hear someone call?"

"They're maybe just foolin'." Ella was listening intently. "Don't you butt in."

"But I can't stand here doing nothing. I must see what's the matter."

One could never accuse Gloria of lack of courage. She had never seen the horse she was afraid of, and a sailboat in a heavy sea made her laugh the more, the louder the wind whistled thru the rigging. Her feeling of personal power, inherited from her father, had been strongly developed. She had by this time overcome her first fear, and now she intended to know what the trouble was all about. Someone was in distress and to do what she could was her one thought as she started toward the door.

"Better not open that door," Little Ella pleaded.

Even as she spoke, they heard a door slam at the head of the stairs above Someone lurched heavily to the stairway, and then to their horror—they knew it by the sound just as well as if the scene had been enacted before their eyes—the man tripped and plunged down the narrow stairs.

"I must know what's going on," Gloria cried .

She rushed across the room and wrenched open the door. At the foot of the stairway just before her was the body of a man, limp and motionless.

(To be continued.)

MUTILATED TEXT

Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., June 9, 1913.

The demand for butter continues good. The supply was about the same as last week and prices were steady. Eggs free from heat defects were scarce and in demand at high prices. Other grades were bought at buyers' figures. Dressed poultry was firm and the market active. Vegetables were quiet and unchanged.

Butter.—Western creamery, 30c; extras, 28c; firsts to seconds, 26@27c; special prints 34@37c; near-by prints, 31c.

Cheese.—New York full cream, 17@17¼c; skims, 8¾@11c, according to quality.

Eggs.—Candled, 24@26c doz.; extras, 23c. Current receipts at $6.00 per standard case.

Poultry.—Fowls, 18@18½c; old roosters, 12c; spring chickens, 29@31c; ducks, 13@14c; pigeons, 23@25c.

Dressed Poultry.—Western fowls, 18@19c; roosters, 13½c; chickens, 18@19c; squabs, $3.50@4.50 doz.

Vegetables.—White potatoes, choice, 60@65c bu. Onions, 90c@$1.10 bag. Cabbage, $1.25@1.75 crate. Lettuce, $1.25@2.00 basket. Cucumbers, $1.00@1.50 basket. Celery, 40c@$1.00 bch. Spinach, $1.25@2.00 bbl. Kale, 25@50c bbl. Egg plant, $1.50@2.00 box. String beans, 75c@$1.25 bushel. Peas, $1.50@2.00 basket. Peppers, $1.50@2.50 carrier. Tomatoes, $1.50@2.50 carrier. Watercress, $1.00@1.50 100 bchs. Asparagus, 6@15c bch. Beets, $2.00@3.00 per 100 bchs.

Fruit.—Apples, choice varieties, 25@75c hamper; $3.00@5.00 bbl. Cranberries, $1.25@2.00 crate. Strawberries, 5@10c qt.

Hay and Grain.—No. 1 timothy, new, $16.50@17.00; No. 2, $14.00@15.00; No. 3 do., $11.00@12.00. No grade, $8.00@9.00. Clover mixed, No. 1, $12.50@13.00; No. 2 do., $10.50@11.50. No. 1 tangled rye straw, $15.00@16.00; No. 1 wheat straw, $9.50@10.50; No. 1 oat straw, $10.50@11.00. New shelled corn, No. 2 yellow, 67@67½c; No. 3 yellow, 65½@66c. Winter milling wheat, $1.03@1.05; No. 1 northern, $1.01@1.02. No. 2 white oats, 46@46½c. Stndard white, 45½@46c; No. 3 white, 44½@45c.

Hides and Skins.—Steers, abattoir, 15@16c; do. country, 13½@14c. Cows, abattoir, 14@14½c; do. country, 12½c. Bulls, abattoir, 12¾c; do. country, 11¼c. Calf skins, Nos. 5 to 12 and up, $1.35@2.45; do. green, 13@14c.

Seeds.—Timothy, $2.65 bu; clover, white, $25; do. crimson, $5.00; do. mammoth, $15.25; do. sweet, $13.00; do. alsike, $14.75; red top, per bu., $15.00; alfalfa, $7.00@10.00; Canada field peas, $2.75; vetch, $6.25; rye, winter, $1.50; spring, $2.00; soy beans, $2.50; barley, $2.50; buckwheat, $1.50; cowpeas, $3.00@3.25; millet, $1.50; oats, $1.20.

Coffee.—Rio, 7s, 10½c; Santos, 4s, 12½c. Mild Coffee—Cordova, 14½@17c.

Provisions.—City beef, smoked and air dried, 24@25c. Beef hams, 33@34c. Pork, family, $21.00@22.00 bbl. Hams, cured, 15@16c; skinned, 15¼@16¼c; smoked, 18@20c. Other hams, smoked, city cured as to brand, 17@19c. Picnic shoulders, 10¾@11⅝c; do. smoked, 13@13½c. Bellies in pickle, 15½@16¾c. Breakfast bacon as to quality, 19@23c. Lard, refined, 11¾@12½c; do. in tubs, 11¾@12½c; do. kettle-rendered, 11¾@12c. Tallow, prime city, 6½@6⅝c; do. country, 6⅝c; do. dark, 5½c; do. cakes, 7c.

Sugar.—Cut loaf, $5.05 cwt.; cubes, $4.50. powdered, $4.35; granulated, $4.25; standard granulated, $4.30; crystal A, $4.25.

Four.—For 196 lbs., in wood, winter clear, new, $4.15@4.40; do. straight, new, $4.50@4.65; favorite brands, $5.25@5.60. Rye flour, Penna., $3.50@3.75.

BALTIMORE PRODUCE

Baltimore, Md., June 9, 1913.

Butter receipts were liberal, but under increased demand for the better grades the market was strong. Much of the egg supply showed heat defects, and prices were a shade easier. Good stock was steady. Prices on poultry were easier under a limited demand. Vegetables moved slowly at steady values.

Butter.—Creamery, fancy, 30c; do., choice, 28@29c; prints and blocks, 29@31c; Maryland and Penna. rolls, 22c; prints, 30@31c. Process, 25@27c.

Cheese.—Flat, 17½c; Daisy, 18@18½c.

Eggs.—Md. and Penna., firsts, 19c; western, 19c; southern, 18c.

Live Poultry.—Hens, 18c; chickens, 17½@18c; old roosters, 11c. Ducks, 13@15c. Geese, 14@15c. Guinea fowls, 20@30c.

Dressed Poultry.—Turkeys, 24@25c; chickens, 20@21c; roosters, 11@12c; ducks, 20@22c; geese, 11@17c.

Vegetables.—Potatoes, white, 65@70c bu. Sweets, $3.00@4.00 bbl. Cabbage, $1.00@1.25 crate. Onions, 80@90c crate. Lettuce, 75c@$1.25 bu. Egg plant, $1.25@2.00 crate. Peppers, $1.50@2.00 crate. Squash, 50c@$1 crate. Spinach, 30@60c box. Cucumbers, 75c@$2 basket. Beans, green, 75c@$1.00 basket. Turnips, 10@15c box. Cauliflower, $2.50@2.75 bbl. Horseradish, $1.50@1.65 box. Beets, 2@3c. Asparagus, $1.50@1.80 doz. Green corn, $1.25@2.00 crate.

Fruit.—Apples, new, $2.00@3.50 bbl.; 50c@1.00 bu. Strawberries, 7@10c qt.

Grain.—Wheat.—No. 2 red western, $1.03; spot, $1.03. Corn, spot, 62c; contract, 62c. Oats, No. 2 white, 45c; standard white 44½c; No. 3 white, 43½@44c. Rye, 60@64c.

Hay and Straw.—No. 1 timothy, $17.50@18.00. No. 2 timothy, $15.50@16.00. No. 3 do., $12.00@14.00. Choice mixed, $14.50@15.00. No. 1 clover, $11.50@12.00. No. 2 do., $9.00@10.00. No. 1 tangled rye straw, $11.00@12.00. No. 1 oat straw, $9.00@10.00. No. 1 wheat straw, $8.00.

Millfeed.—Spring bran, $21.00@21.50; Middlings, flour to white, $26.00@28.00; western middlings, $22.50@23.00; city mills mids. **$23.00@23.50.**

BUFFALO PRODUCE

Buffalo, N. Y., June 9, 1913.

Butter.—Firm. Creamery, choice, 28c; choice dairy, 26@27c.

Cheese.—Steady. Fancy, 17½@18c; good, 16@16½c.

Eggs.—Firm State, fresh, 22@23c; western, 20@21c; mixed, 21@22c.

Dressed Poultry.—Active. Turkeys, per lb., 22@24c; fowls, fancy, 17@20c; chickens, 16@20c; **old roosters, 14@15c; ducks, 21@24c; geese, 17@18c.**

Live Poultry.—Steady. Chickens, 17@18c; ducks, 21@22c; geese, 15@17c; turkeys, 20@21c; old roosters, 13@14c.

Vegetables.—Potatoes, firm. Home-grown, 80@85c bu. Cabbage, $1.75@3.00 crate. Onions, 40@80c sack. Beans, green, $1.50@2.00 hamp. Turnips, $1.00@1.25 bbl. Celery, 80c@$1.00 doz. Spinach, 40@50c hamp.

Beans.—Quiet, steady. Marrow, fancy, $3.35@3.40; medium, $2.30@2.50; red kidneys, $2.00@2.25.

Fruits.—Apples, $3.50@4.00 bbl.; 50@75c bu.

Honey.—Firm. No. 1 fancy, 16@17c; No. 2 new, 13@15c; dark, 12c.

Hay.—Firm. Timothy, choice on track, $16.00@16.50; No. 2 do., $15.00@15.50; No. 3, $12.00@13.50; light mixed, No. 1, $13.00@13.50; rye straw, $10.00; oat and wheat straw, $8.00@9.50.

Feed.—Steady. Spring bran, $20.00 ton. Standard mids., $21.00. Corn meal, $25.50. Gluten, $23.50. Hominy, $25.00. Oilmeal, $27.50. Cottonseed meal, $32.00.

NEW YORK PRODUCE

New York City, June 9, 1913.

Good creamery grades of butter were a shade higher and in fair demand. The supply of eggs was liberal. There is, however, a good demand for strictly fresh stock and it is being sold at steady or a shade higher prices. Dressed poultry is steady to firm. The choicest stock is scarce and in good demand. Old potatoes are in liberal supply and lower. Other vegetables were in excess of demand and moved slowly.

Butter.—Creamery firsts to extras, 26¾@27¾c; thirds to seconds, 25½@26½c; factory, 22@23½c; state dairy, 24@27c; packing stock, 20@21½c; process, 24½@25½c.

Cheese.—Whole milk, specials, 13@13¼c; do. common to fancy, 12@13c; skims, 5@10c.

Eggs.—State and near-by, 22@25c; fresh gathered, 14@23c; mixed, 20@22c.

Dressed Poultry.—Turkeys, dry, 18@19c; chickens, Penna., 28@35c; fowls, 14@18½c; old roosters, 13c; ducks, 15@20c; roasters, 19@22c.

Live Poultry.—Fowls, 18c; chickens, 18c; old roosters, 12½c.

Grain.—Easy. Wheat, No. 2 red, nominal. No. 1 Northern, $1.01. Corn, 65¾c. Oats, standard white, 46½c.

Vegetables.—Potatoes, state, $2.00@2.10 per 168-lb. bag. Cabbage, $1.25@2.00 crate. Green beans, 50c@$1.25 basket. Carrots, 50c@$1.00 bag. Cucumbers, 30@75c doz. Lettuce, $1.00@2.00 bbl. Squash, 50@75c basket. Horseradish, $1.00@3.00 cwt. Parsnips, 50@75c bbl. Turnips, 50c@$1.00. Watercress, $1.00@1.50 per 100 bunches.

Fruit.—Apples, $1.75@4.00 bbl., according to variety. Strawberries, 5@13c qt.

WASHINGTON PRODUCE

Washington, D. C., June 9, 1913.

Eggs.—Near-by, fresh, per dozen, 21c; southern, per doz., 20c.

Cheese.—New York, new, per pound, 10½c; flat, 16½c.

Butter.—Best prints, per pound, 32c; tub, 31c; process, 27c; undergrades, 25c.

Live Poultry.—Hens, per lb., 18c; roosters, 10c; springers, 26@28c; turkeys, 16@17c; geese, live, 10@12c; ducks, 15@16c.

Vegetables.—Potatoes, bbl., $1.50@2.00; 80c@$1.00 bu. Onions, 75c@$1.25 crate. Lettuce, per basket, 50c@$2.00. Beans, 75c@$1.50 basket. Peppers, per crate, 75c@$1.50. Egg plants, per box, $1.50@3.00. Squash, per bbl., 50c@$1.00. Beets, $2.00@3.00 per 100 bchs. Mushrooms, per lb., 20@40c. Carrots, 2@4c bch. Cabbage, $1.00@1.25 crate. Radishes, 50c@$1 per 100. Cauliflower, $1.00@2.00 crate. Asparagus, $1.25@2.50 doz. Apples, $1.50@4.50 bbl. Strawberries, 5@15c box.

YORK PRODUCE MARKET

York, Pa., June 9, 1913.

Eggs were plentiful and slow sellers. Butter is off several cents for the country goods. The fine display of berries at the Tuesday and Wednesday markets caused the people to believe the reports as to shortage of crop were false and there was a general slump. Prices ranged from 5 to 9 cents, and moved very slowly then. The crop was a week early this year, and the housewives are demanding berries for preserving this week, which means higher prices for the last pickings, which are always more or less imperfect.

Butter.—Country, 25@32c; separator, 33@35c. Milk, 5c per qt.

Eggs.—19@22c doz.

Poultry.—Hens, 15c lb.; springers, 27@30c lb. Dressed poultry, 45@90c each.

Vegetables.—Potatoes, new, 20@30c ½ peck; old, 60@75c bu.; cabbage, 2@6c each; lettuce, 2@5c; beets, 4@5c bch.; radishes, 3@5c; onions, 2@4c bch.; lima beans, 12@14c qt.; soup beans, 7@10c qt.; sweet potatoes, 12@15c per ½ pk.; lard, 12@15c lb.; celery, 3@10c; rhubarb, 4@5c bch.; asparagus, 5@9c bunch; string beans, 30c per ½ pk.; peas, 25@40c per ½ pk.

Fruit.—Apples, 15@18c a half peck; strawberries, 5@18c box; cherries, 12@18c box; currants, 12c box.

Retail Grain Market.—Wheat, $1.12; corn, 75c; oats, 50c; bran, $1.15 a cwt; rye, 65c; middlings, $1.40 a cwt.

Wholesale Grain Market.—Wheat, $1.02; corn, 63c; oats, 40c; rye, 55c.

WILMINGTON PRODUCE

Wilmington, Del., June 9, 1913.

Fruits.—Apples, $1.00 basket; $5.00@5.50 bbl. Strawberries, 5@10c box.

Vegetables.—Potatoes, $1.00 bu.; new, $4.50@5.00 bbl. Cabbage, $1.50 crate; 25c bas. Onions, 45c bas. Spinach, $1.50 bbl. Sweet potatoes, 75c basket; $2.50 bbl. Kale, $1.25 bbl. Lettuce, $2.00 basket. Asparagus, $2.00@2.50 doz.

Poultry.—Chickens, live, 18@19c; do., dressed, 20@22c. Ducks, 13@14c lb.; dressed, 20c.

Eggs.—19@21c.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., June 9, 1913.

The cattle market during the past week was steady on the top grades and weak on poorer stock.

	Beef Cattle	Sheep and Lambs	Hogs
Total for week	3,041	10,230	3,765
Previous week	3,844	11,646	4,705

Best steers	$8.40@8.50
Choice steers	8.30@8.40
Good	8.00@8.25
Medium steers	7.75@8.00
Common steers	7.25@7.50
Bulls	6.00@7.25
Fat cows	6.00@6.65
Thin cows	3.00@3.65
Milk cows	40.00@65.00

Veal calves firm.

Best calves	$10.50@11.50
Good to choice do.	10.00@11.09
Medium	7.00@8.00
Common do.	6.50@7.00
Thin do.	5.00@8.00

Sheep and lambs are steady.

Clipped sheep	$5.75@6.00
Choice do	5.50@5.75
Good wethers	5.00@5.50
Common to medium	3.00@5.00
Ewes, fat	4.50@5.00
Extra lambs	7.25@7.50
Good to choice do.	7.00@7.25
Common to medium	5.00@7.00
Early spring	8.00@9.00

The hog market continued steady thruout the week at $12.00@12.25.

City Dressed Stock.—Choice classes of dressed meats are steady. Trade is normal. Steers, 11½@13c; heifers, 10@12½c; cows, 8@11½c. Veal calves, 14@16c; country dressed calves, 14@15c; extra do., 15½c. Sheep, 10@11c; extra wethers, 12c. Spring lambs, 15@18c. Hogs, 12¼@12½c.

BUFFALO LIVE STOCK

Buffalo, N. Y., June 9, 1913.

There was a slow trade in cattle during all of last week. Towards the close the market ruled firm with the best steers selling at $8.25@8.40. With a run of 170 carloads today, grassy steers were discriminated against, while dry-fed lots sold steady.

Choice heavy steers	$8.25@8.40
Medium	7.25@8.00
Yearlings	7.00@7.75
Plain heavy	7.75@8.00
Handy butchers	6.75@8.25
Good to choice fat cows	6.25@7.50
Good to choice heifers	7.25@8.00
Butcher bulls	7.25@7.75
Feeders	6.00@7.75
Stockers	4.75@6.75
Cows and springers	30.00@85.00

The liberal receipts of calves on Monday made a lower basis most of the week. On the close the trade was active and firm on the basis of $11.00@11.50, an advance of 75 cents. With 1,000 head on sale today this advance was lost.

Choice veals	$11.00@11.25
Light and thin	4.00@6.50

Sheep and lambs remained slow the fore part of last week, but closed active and higher on all desirable grades. Yearlings were in good demand and sold 25 cents higher. Sheep for slaughter and feeders were in good demand and higher. With only 25 cars on sale today the market was strong.

Choice lambs	$9.00@9.50
Poorer grades	7.50@8.00
Yearlings	7.25@7.50
Wethers	5.75@6.00
Ewes	5.25@5.50
Sheep	5.50@5.75

Hogs were steady thruout all of last week but closed at an advance of 10 to 15 cents. Heavy hogs were in active demand. Arrivals today totalled 100 cars. The market was steady.

Heavies	$9.00@9.05
Mixed and medium	9.00@9.05
Yorkers	9.00@9.05
Light Yorkers	9.00@9.05
Pigs	9.00@9.05
Roughs	7.75@8.00
Stags	6.00@7.00

NEW YORK LIVE STOCK

New York City, June 9, 1913.

Cattle receipts for the week were 2,648 head. The market is irregular.

Steers	$6.25@8.75
Bulls	6.00@7.50
Cows	3.75@6.75

Dressed beef steady. Native sides, 11@13c.

Calf receipts were 6,221 head. The market is higher.

Choice veals	$8.50@12.00
Good veals	6.00@7.25
Culls	6.50@8.00

Dressed calves are higher.

City-dressed veals	15@18c
Country-dressed veals	13@13½c

Sheep and lamb receipts were 16,948 head. The market is irregular.

Clipped sheep	$3.75@5.25
Wethers	5.50@5.75
Culls	2.50@3.50
Spring lambs	7.25@8.85

Hog receipts were 9,454 head. The market is higher at $8.90@9.15.

BALTIMORE LIVE STOCK

Baltimore, Md., June 9, 1913.

Beef receipts for the week were 1,448 head. The market is steady.

Steers	$6.75@8.15
Heifers	5.75@7.25
Cows	3.25@6.00
Bulls	6.35@7.00
Fresh cows	22.00@77.00

Sheep and lamb receipts were 4,986 head. Under a heavy supply the market is lower.

Sheep	$2.25@5.25
Lambs	6.00@8.65
Spring lambs	6.75@8.40

There were 7,554 hogs on sale during the week. Under a fair supply the market is steady.

Light western	$9.25@9.30
Heavy to medium	9.00@9.25
Near-by	9.00@9.25
Pigs	9.00@9.15
Roughs	7.50@8.00

Calf receipts for the week were 451 head. Most of the receipts were of unattractive stock, and under a fair supply the market is lower at $6.00@10.25.

PITTSBURGH LIVE STOCK

Pittsburgh, Pa., June 9, 1913.

With a light supply last week the cattle market ruled active and generally 15 cents per cwt higher; some sales of light cattle showing even a greater advance. Choice heavy cattle were mainly steady. Best fresh cows sold steady; others were slow. Today's receipts were 90 loads and the market ruled about steady with last week's prices.

Good to choice	$8.40@8.50
Good, 1300 to 1400 lb.	8.20@8.35
Medium to good, 1200-1300 lb.	8.10@8.20
Tidy, 1050-1150 lb.	8.00@8.15
Fair to medium, 900-1100 lb.	7.75@8.00
Common to good fat oxen	5.00@7.00
Common, 700-900 lb.	6.00@7.25
Common to good fat bulls	5.00@7.75
Common to good fat cows	4.75@7.25
Heifers, 700 to 900 lb.	5.50@8.00
Bologna cows	4.00@4.40
Fresh cows and springers	20.00@80.00

Veal calves were in demand all week and prices were steady with last Monday's quotations. Today's receipts were 1,100 head.

Heavy and thin calves	$4.50@7.00
Veal calves	9.00@11.00

The supply of hogs was fair thruout the week. With a few more on hand during the middle of the week, prices eased off from 5 to 10 cents per cwt., but the close was about 5 cents higher than on Monday. Today's receipts were 55 double-deck loads. The market ruled steady to 5 cents lower.

Prime heavy	$8.85@
Prime medium weights	8.95@
Heavy mixed	8.90@
Best heavy Yorkers	8.95@
Light Yorkers	9.00@
Pigs as to quality	8.95@9.00
Common to good roughs	7.40@7.75
Stags	6.50@7.50

Sheep and lambs were in fair supply thruout the week. With a good demand the market closed steady on best sheep and 25 cents per cwt. lower on lambs. Spring lambs ruled steady all week. Today's receipts were 40 double-deck loads. Choice sheep sold strong; other grades of sheep were steady and common and fair lambs slow and lower. There was a fair supply of heavy lambs, and choice sold strong with others slow.

Prime wethers	$5.40@5.60
Good mixed	5.00@5.15
Fair mixed ewes and wethers	4.25@4.75
Culls and commons	2.50@3.50
Spring lambs	6.00@8.75
Culls to choice lambs	4.00@7.25

PITTSBURGH HAY AND GRAIN

Pittsburgh, Pa., June 9, 1913.

Lower grades of hay are slow and dull. No. 1 timothy while being light in receipt is equal to the demand. Straw receipts are heavy, and under a light demand the market is slow. No. 1 timothy, $14.50@15.00; No. 2 do., $12.00@13.50; No. 3 do., $9.00@11.00; No. 1 light mixed, $12.50@13.00; No. 1 clover mixed, $12.00@12.50; No. 2 do., $9.00@10.00. No. 1 clover, $12.00@12.50; No. 2 do., $7.00@10.00. No. 3 prairie, $10.50@11.00; No. 4 do., $8.00@8.50; No. 1 oat straw, $8.25@8.50; No. 2 do., $8.00@8.25. No. 1 wheat, $8.25@8.50; No. 2 do., $8.00@8.25; No. 1 rye, $11.00@11.50; No. 2 do., $9.25@9.50. Ear corn arrivals are in fair demand. No. 2 yellow, 64½@65½c; No. 2 high mixed, 63½@64½c. Shelled corn receipts are in excessive demand. No. 3 yellow natural, 63@63½c; sample, 59½@60½c. Oats are in slow demand and the market is dull. No. 2 white, 42¾@43c; standard, 42@42½c; No. 3 do., 41@41½c; No. 4 do., 39@40c. The demand for middlings is slow. Market steady. No. 2 white mids., $23.75@24.25; No. 1 brown mids., $21.25@21.75. Winter wheat bran, coarse, $22.00@22.50; do., medium mids., $21.00@21.50.

ELGIN BUTTER QUOTATION

Elgin, Ill., June 9, 1913

The quotation committee of the Elgin Board of Trade this afternoon declared butter firm at 27½c a pound.

NEW YORK MILK QUOTATION

The wholesale price of milk is considered to be $1.41 per 40-quart can for class C; class B, $1.51. Official quotations have been abolished.

TOBACCO MARKET

The second semi-annual report of the leaf tobacco stocks on hands, as provided by the Cantrill law, indicates quite a surplus of domestic cigar tobacco. The total stock is given at about 400,000,000 pounds, which is nearly 55,000,000 pounds more than at the time of the first report, six months ago. It is stated that this amount is sufficient for three years' consumption. If these figures are to be accepted as correct, they do not indicate favorable market conditions. It should be remembered, however, that tobacco stocks are naturally larger at this time of the year than in October, at which time last report was made, and that these semiannual reports are made up from the mere sworn statements of dealers and manufacturers who, as a rule, would represent their stock as large as possible. If the truth could be known it is quite likely that these figures would be greatly reduced. It has always been one of the favorite weapons of manufacturers to falsely represent the amount of tobacco on hands, as a means of beating down prices on the farm.

Practically the whole of the 1912 crop has been bought, only an occasional crop remaining in hands of growers, this fact constituting a strong circumstantial indication that surplus is not as large as claimed. It is now thought that about 1,500 acres of Havana tobacco will be grown this year, this being about 10 percent of the total acreage of this section. Despite many conflicting reports, it seems that the acreage will be almost as large as last year. The recurrence of dry, cool weather has retarded growth of plants and favored the work of insects, resulting in further delay in transplanting. It would now seem that it will be very late in the present month before the last plant is in the field, this, of course, creating an unfavorable condition for best results.—H. E. Tweed, June 9, 1913.

STATE GRANGE DAY AT STATE COLLEGE

June 18 will be Grange Day at State College. The Pennsylvania Railroad has granted special low rates for the day. The Trunk Line Associations offer reduced rates for the round trip, tickets being good from June 16 to 29th. The day's program will consist of a systematic tour of the entire College premises. Full information may be obtained by addressing Prof. M. S. McDowell, State College, Pa.

The New Oleo Standard.—The sale of oleo colored in any way to resemble butter is now illegal, a definite standard of color having been fixed by a law just signed. It is claimed by state authorities that this will have the effect of preventing coloring of oleo and its palming off as butter.

Gathering of Statistics.—In the bill to create the department of labor and industry there is provision for a bureau of statistics to cover the agricultural field as well as the manufacturing and mining. This bureau will probably be among the first to be organized. The gathering of figures will be put upon a systematic basis, with every effort to make the figures accurate and available to every one.

Household

COUNTRY HYGIENE

It has been a matter of surprise as well as annoyance to find that there is an idea prevailing among the writers of magazine articles to the effect that country people are careless and ignorant regarding hygiene and sanitary conditions. Indeed one might sometimes suppose that country people and ignorance are synonomous terms.

For instance, the question is so often asked why tuberculosis should be so prevalent in country districts, where its sworn enemies, fresh air and sunshine, are found in great abundance. The answer, almost invariably is that the people do not pay sufficient attention to hygiene. To prove this, they go on to tell of the damp, dark country parlors, never used except for the most formal and important occasions, carefully closed the greater part of the time to exclude sunlight and air, and thereby becoming repositories for countless numbers of germs, lying in wait to pounce upon the first unfortunate individual who is honored by being entertained within its walls. They also say that the average country person does not realize the importance of having plenty of fresh air in his bedroom at night during the winter season, as they labor under the impression that fresh air is necessarily cold air, and night air a deadly and dangerous thing, laden with malarial germs and apt to cause attacks of cold and pneumonia. Neither, they say, do the people realize the importance of frequent and regular bathing.

MAKING STRAWBERRY SHORTCAKE.

Now, while I do not pretend to assert that all country people understand the last word about hygiene and sanitation, I do not think there is such gross ignorance among us as one might gather from such reading. The proverbial country parlor, with its stiff, ungainly hair-cloth furniture and center table, upon which the family Bible and wax flowers under glass cases were conspicuously placed, doubtless did exist years ago. Doubtless, also, they were reserved for such important occasions as weddings and funerals, when such things were the greatest diversions their owners had; but it perhaps went out of fashion with the circuit rider. Today the country parlor (if indeed such a formal and comparatively useless room exists) is opened to admit sunlight and air, just the same as the other rooms in the house, the people realizing that fresh air and sunshine are of more importance than the preservation of the colors in the carpet or the covering of the furniture.

As for the tightly-closed bedroom windows, I think it is a long time since the people thought that night air is a deadly and dangerous thing. They realize that a proper system of ventilation in their bedrooms is more health giving than all the drugs in the pharmacopoeia. They know that colds are more likely contracted from breathing air from which all the oxygen has been consumed than by breathing fresh night air, no matter how cold it may be. As far as bathing is concerned, I imagine there are very few country people who are merely "Saturday night tubbers;" at any rate, no larger proportion than is found in the city.

In the olden days tuberculosis was not recognized as a contagious disease and no attempt was made at isolating a patient or the things which he used. Other members of the family slept in the same room, probably in the same bed with the sufferer, with impunity. Such a state of affairs, however, no longer exists, and while one may still find a few people who obstinately refuse to take precautions, insisting that such things "did not used to be considered necessary," the majority of people realize the importance of keeping the dishes of the victim of this dread disease separate, and of destroying any thing which may be a source of contagion or infection.

The deadly work of the house fly, dragging its wings and feet thru all sorts of filth, and returning germ laden to the house to infect the first thing with which it comes in contact, is fully understood, and it is scarcely necessary to get the board of health after the farmer to make him cover his garbage cans and drains. Realizing that milk and water are sometimes sources of infection, cleanliness in regard to them is generally observed. No longer do we hear of epidemics of contagious and infectious diseases sweeping whole communities and exacting such frightful death toll. As a matter of fact, the farmer of the present day is not simply plodding patiently and mechanically along in the footsteps of his forefathers, declaring obstinately that what was good enough for them is good enough for him, but he is on the alert for improved and intelligent methods, and usually willing and anxious to do his part so far as he can. So I think I may say that the country districts "report progress."—E. M. Parrott, Maryland.

MAKING STRAWBERRY SHORTCAKE

Hull, cut in pieces and sweeten two boxes of strawberries. Let them stand for several hours. Arrange between layers of shortcake, and garnish the top with whole berries and whipped and sweetened cream flavored with strawberry extract.

To make the shortcake, mix and sift two cupfuls of flour, half a teaspoonful of salt and three teaspoonfuls of baking powder. Rub in six tablespoonfuls of butter, then gradually add one cupful of milk. When thoroly mixed, divide in halves; put each half into a round buttered and floured cake tin. Flour the hand and pat to fit the tin. Bake for 20 minutes in a hot oven.

Separate the upper portion from the lower portion of each cake with a fork—never with a knife. Spread with butter, fill with strawberry filling, arrange in layers, with filling between, and cut into neat squares.—Marion Harris Neil.

Travel Stories.—The June number of the Century Magazine contains a number of exceedingly interesting travel sketches in addition to the valuable serial features now running. A sketch of The Great St. Bernard Pass in the Alpine Mountains of Switzerland is filled with interesting facts and is richly illustrated. "The Training of a Japanese Child" is also full of interest and throws many interesting side-lights on the character and custom of the Japanese race. A particularly pleasing feature are six lithographs, drawn from nature, illustrating the Grand Canon of the Colorado. In addition to these is another view of the Hayes-Tilden contest, a feature of the Century's After-the-War Series.

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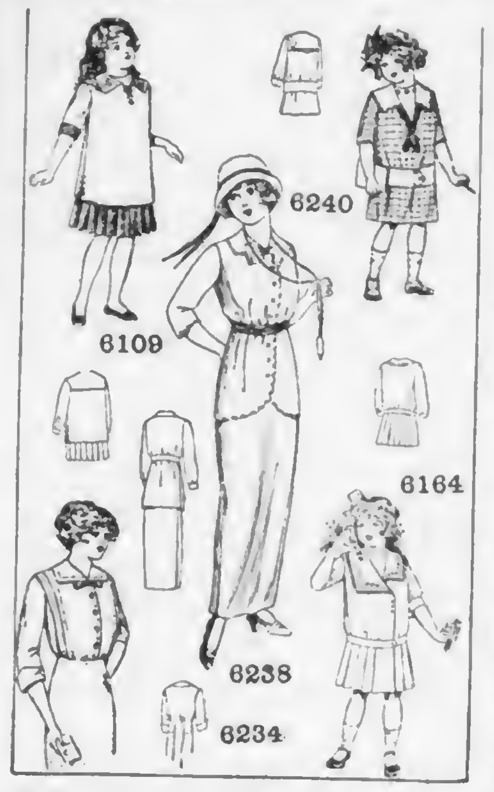

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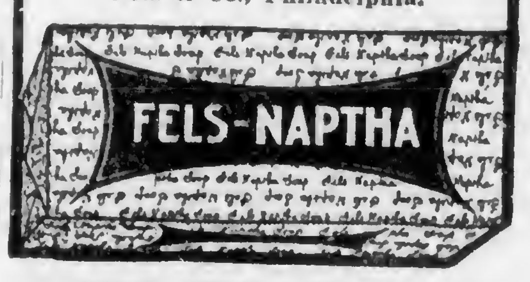

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Veterinary

(Conducted by W. C. Fair, V. S.)

(Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also name and address of writer. Initials only will be published. When reply by mail is requested, it becomes private practice, and a fee of $1 must accompany the letter. This is one of the most valuable columns of the paper and we invite readers to make use of it. Clippings from this column, when properly preserved and classified, would make one of the most valuable medical symposiums a farmer-stockman could obtain.)

Chronic Stocking.—Have a horse, 8 years old, when not in use stocks in both hind legs; does not seem to be out of condition. His coat is fine and the stocking in legs leaves soon after a short drive. The stocking is mostly low down in hind legs, is of six months' standing. Can you suggest a cure thru Pennsylvania Farmer? J. L. F., Lancaster, Pa.—Stocking is not a disease, but a result of one or more other ailments. In chronic cases the swelling is quite persistent. Give him a teaspoonful powdered nitrate of potash, 1 dr. ground nux vomica and 1 dr. powdered digitalis at a dose in feed, 2 or 3 times a day.

Hole in Side of Teat.—I have a cow that has a hole or opening in side of rear teat which leaks milk whenever the udder is very full. She is a fine cow and I want to cure her. J. K. B., Souderton, Pa.—Make the edges of the opening raw and either stitch wound or run a sterilized needle thru edges, tying a clean silk thread back of needle, which will bring edges together; then they will perhaps unite. Place some iodoform between edges of skin, and apply a little every day. Remember, the parts should be thoroly cleansed with a 5-percent solution of carbolic acid or painted with tincture iodine before the operation is performed; also bear in mind the importance of sterilizing needle and thread. Without using cleanly and septic measures, you will fail in getting edges to unite.

Stomach Worms.—I have a 3-year-old colt with a slight cough, which has been hanging on to him for the past 12 months. I am sure he is troubled with stomach worms. He is thin, but is a hearty eater. A remedy will be appreciated. C. W. S., Honey Grove, Pa. —Give 1 dr. powdered lobelia and 1 oz. ground gentian at a dose in feed, 2 or 3 times a day; also give him a dessertspoonful of salt with each meal.

Chorea—St. Vitus' Dance.—I own an English Pointer dog that had an attack of distemper and after the acute symptoms disappeared he commenced to jerk in right fore leg, and for the past several months he has kept it up; besides the fore part of body jerks. It makes no difference whether he is standing, laying down, awake or asleep, he jerks just the same. I wish you would tell me what can be done for him, as he is a valuable dog and only 18 months old. H. S. K., Stewartstown, Pa.—Chorea is convulsions of the voluntary muscles and very often comes on suddenly, especially in a case of distemper in the dog. Very often the dog shows a little lameness for two or three days before the jerking sets in, and he may suffer some pain in the early part of this ailment. In the chronic form, I do not believe it is painful. The jerking may be continuous day and night, and very often it causes loss of flesh in the dog. Chorea is liable to become chronic, and when it does, I believe it is incurable. Regarding treatment, your dog should be well fed, given one-twentieth of a grain of strychnine, 30 drops fluid extract gentian, 30 drops fluid extract of cinchona and 4 drops Fowler's solution at a dose, 3 times a day. Kindly understand that chronic chorea is an unsatisfactory disease to treat.

Pennsylvania Slate.—According to a recent report from the United States Geological Survey, Pennsylvania is the greatest slate producing state in the Union. The total production for the country in 1912 was valued at $6,043,318, and of this Pennsylvania produced $3,474,247, or 57.48 percent. This was a slight increase, $42,896, over the figures in 1911. The state's production classified was as follows: Roofing slate, 716,770 squares; mill stock, 3,633,518 sq. ft.; rough mill stock, 437,683 sq. ft.; blackboards, 2,898,742 sq. ft.; school slates, 4,482,571. Practically all of this comes from Lancaster, Lehigh, Northampton and York counties.

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They simply object to wearing out. The original sole of firm, long-lived hemlock leather will outwear two ordinary soles. And after that Bass Shoes stand as many as 4 to 6 half-soles. We even know of cases where the same pair have been half-soled 14 times!
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AGRICULTURE THE KEYSTONE OF NATIONAL PROSPERITY
ESTABLISHED 1880
PUBLISHED WEEKLY
VOL. 33.—No. 25.
PHILADELPHIA, PA., SATURDAY, JUNE 21, 1913.
50 CENTS A YEAR.

Beadle Dr. T J
C813

Cultivation of Corn.

By HARVEY S. ADAMS,
County Agriculturist, Butler Co., Pa.

At this season of the year the subject of cultivation is probably more vital to the corn grower than any other. One out of every three acres plowed in the United States each year is planted to corn. Since corn occupies such an important position in American agriculture, and since its cultivation is so important at this time, it behooves every farmer to carefully consider the principles underlying successful crop production.

Why Cultivate.—The chief objects of cultivation are (1) to keep the surface soil loose and receptive to rainfall; (2) to prevent evaporation of soil moisture; (3) to admit air into the soil, and (4) to destroy weeds. In the case of small grains, as wheat and oats, tillage has not in most instances been found to increase the yield. These small grains quickly occupy the soil and prevent the growth of weeds. The cultivation of corn is made necessary by the fact that comparatively few plants are raised per acre, and that it takes these plants from four to eight weeks to occupy the soil and shade the ground sufficiently to check the growth of weeds.

Importance of Soil Moisture.—The amount of soil moisture needed by the corn plant has been determined by King in Wisconsin to be 270 pounds for every pound of dry matter produced. In other words, for every pound of oven-dried stover and corn in the form of grain produced, 270 pounds of water are required. This is only about half the amount required by oats and clover. We must remember, however, that corn makes its greatest growth during the months of July and August, when the rainfall is usually very low. This accounts for the suffering of the corn crop during drouth.

Careful and thoro cultivation at frequent intervals, especially following rainfalls, constitutes the most practical means of conserving soil moisture. The nearer level and smooth the surface of the ground can be kept the better. Thoro cultivation is needed, but that does not mean deep cultivation. A heavy beating rain following planting, which packs the surface down hard, may necessitate deep stirring to loosen up the soil, or a long rainy period may give the weeds such a start that they can not be destroyed by shallow cultivation. Where soils are inclined to suffer from drouth, it may be well to make the first cultivation deep, thus encouraging the plants to root deeply. By forming a deeper root system the plants are better able to endure drouth. These are about the only occasions when deep stirring of the soil is necessary or advisable.

While corn does best on a soil which is deep and loose, the deepening and loosening of the lower soil should be done before the corn is planted, and the shallower the later cultivations can be kept, the more satisfactory will be the results. Corn has no large tap root, like that of clover and alfalfa, but is a surface feeder, having a large number of long roots distributed thru the upper soil. Whenever the soil is cultivated so deep as to disturb any of the roots, the plant is necessarily weakened by having its supply of moisture and nourishment reduced. A constant supply of food is as necessary to a growing plant as to a growing animal. By cutting off so many of the corn roots, as is done by cultivating four or five inches deep, the plants are likely to receive a check from which they never fully recover.

A HORSE-POWER DERRICK FOR STACKING HAY.

Depth of Cultivation.—A number of our agricultural experiment stations have tested the relative advantages of deep and shallow cultivation of corn. The records of 116 such tests, made at 13 different experiment stations thruout the United States, show a difference of more than 15 percent in yield in favor of shallow cultivation. Sixty-one tests of deep cultivation gave an average yield of 64.9 bushels per acre, while 55 tests of shallow cultivation gave an average yield of 74.7 bushels, a difference of nearly 10 bushels per acre. One to two inches is considered shallow cultivation, and four to five inches deep cultivation. Studies of root growth of corn made at the Illinois Station indicate that 50 percent more roots may be cut off at four than at three inches deep.

THE WEEDER IS ONE OF THE MOST USEFUL IMPLEMENTS ON THE FARM WHEN PROPERLY USED.

Killing weed seeds just as they are germinating, destroys weeds "where they aint."

Number of Cultivations.—It would be impracticable to give a definite rule as to the exact number of cultivations needed. In some seasons two cultivations may accomplish as much as four in other seasons. It is a question largely determined by weather conditions. The Butler County Farm Bureau, during the season of 1912, conducted a corn study which brought out the following facts: 12.5 percent of the corn of the county was cultivated 2 times; 29.7 percent was cultivated 3 times; 45.3 percent was cultivated 4 times, and 12.5 percent was cultivated 5 times or more.

Cultivation should begin soon after planting with a smoothing harrow, the teeth pointing backwards; or, if the soil is very fine and mellow, with a weeder. Another harrowing may be given when the corn is several inches above ground. Frequent cultivation with a one-horse cultivator with at least five teeth, or better a two-horse cultivator with at least three teeth on each side, should be given.

Whatever system may be adopted, the cultivation should be sufficiently frequent to keep down all weeds and to break the surface crust after every rain. In time of drouth, frequent cultivation is especially important. Deep cultivation at such times is often ruinous, but when only one or two inches of the surface soil is stirred, evaporation is checked. Altho the surface may become very dry and dusty, the soil immediately below this "dust mulch" will remain fresh and moist much longer than when the surface is allowed to become compact, even tho not crusted by rains. Corn often suffers from want of cultivation, but never from too frequent, shallow stirring of the soil.

IMPROVING THE ROADS

There seems to be a great difference of opinion as to the value of the road drag in the making and maintaining of a good dirt road. The inventor of this useful instrument has demonstrated its value, and in many parts of the country the good roads which one sees during the summer testify to the skill with which it has been used. Like every other instrument, it must be used with intelligence to produce the best results.

Everyone knows that a road can not be kept in good condition unless it is well drained. This, in many places, is hard to do, but if the gutter is in the middle of the road, after every rain the road must of necessity get soft. A properly drained road bes is, of course, made with large rocks in the bottom, gradually getting smaller toward the top. But it will be a long time before the dirt roads of Pennsylvania are thus constructed. In the meantime, a very satisfactory road can be made by rounding up the road and keeping the drains at the sides of the road open so that as soon as the rain falls it may have the opportunity to run away.

The best and easiest time to round up a road is in the spring before the ground settles after the frost has come out of the earth. When the ground is soft enough so that it can be moved easily if it is gone over with a drag, it will move up to the middle of the road, and there soon dry up and become hard. If, as is often done, nothing is done till the road is dry, nothing but a road scraper and six or eight good horses can move the dirt, and when it is moved it will not make as good a road as if moved earlier in the season when the ground was soft and two horses could do the work.

Those who have the roads in charge sometimes become discouraged because those using the roads do not seem to appreciate what is being done to make good roads. Farmers will sometimes allow the best kind of sledding to pass, and when the mud is the deepest haul their grain to market, often driving in the same rut until they have put the wheels in up to the hub. When the road has been freshly dragged they will put on a heavy load, and with four horses cut deep into the soft earth. This will, to a certain extent, undo the work which has been done, and yet not entirely. The ground has been moved to the center of the road, and while there may be ruts in it, yet when it hardens the crown will be in the middle of the road, where it should be.

There should be some good, wholesome laws on the road question. On both the improved and the dirt roads there should be some restrictions as to the weight of loads which could be hauled and the width of the tire. Ohio found that it could not keep good roads, even where they were piked, until they regulated the width of the tire and the size of the load. One team with a heavy load, when the road is soft, can do more damage in an hour than 10 men can repair in a week after the road has gotten hard.

As civilization advances men must learn to have more consideration for the common good. The road which was good enough for a frontier will not answer when the frontier has moved beyond the Rockies. In these days of conservation why is it that the farmer does not realize that bad roads are costing him cents and, perhaps, dollars, every time he goes to town or to market? It may not amount to any great sum for one man with little to take to town, but to the great mass of the tillers of the soil it means millions. Much of this would be saved if the roads were dragged when they are soft in the spring and then after every rain, to keep them in shape and allow the water to run off as soon as possible, before it has time to soak in and soften up the ground.—Wm. G. Owens, Union Co., Pa.

THE INTERNAL COMBUSTION ENGINE

An ordinary shotgun, at the moment of discharge, delivers a pressure of something like 14 tons against the load before it. If we multiply this pressure by the distance in which it is exerted, that is, till the muzzle of the gun is reached and the gases released, we would have approximately the number of foot-pounds working energy the gun can deliver during one impulse. Let us suppose that 300 such impulses could be delivered against the same load within a minute, we would then be able to multiply our former result by this number and determine the horse power the gun is producing. It is probable that the gun, in one of its earlier types, was the first form of internal combustion engine ever used extensively by man. Such a destructive force as gun discharge could not, however, be applied to machinery, but it set men to thinking that an agent which could be so destructive to human life might be made to serve life in the more peaceful arts.

TRAIN-LOAD OF FARMERS AT LUNCH AT STATE COLLEGE, AT RECENT FARMERS' EXCURSION DAY.

What the Internal Combustion Engine Includes.—All heat engines for which the heat is developed within the engine cylinder instead of in a boiler or other outside reservoir, are internal combustion engines, whether the fuel used to produce the heat is gunpowder, gas, gasoline, kerosene or alcohol. For convenience, all are usually called gas engines, and they differ little in general construction except in the arrangement for getting fuel into the cylinder; in fact, nearly all gasoline engines can be operated on kerosene by a few slight changes, and the most important difference between the gasoline and gas engine is the use of a full tank and carburetor with the first, instead of the gas bag of the second. The power produced in all of these originates, not in the force of the explosion, as many suppose, but in the sudden expansion of gases by the intense heat developed in the rapid combustion. The temperature in the combustion chamber of a gasoline engine reaches about 3,000 degrees Fahr. for the moment; more than enough to fuse iron and sufficient to turn the walls of the cylinder itself into molten metal if the temperature were not quickly reduced.

The Gasoline Engine.—Every gasoline engine, whether vertical or horizontal, has a cylinder, a piston, ignitor and frame; these are its main parts. To use them one must add a carburetor, governor, balance wheel, connecting rod, crank shaft, pulley, tank, lubricating devices, together with certain pipes, tubing, stop cocks and valves, and whatever part of the ignition system has been omitted. Some of these articles are probably included in every shipment of a ''bare engine,'' but the omissions vary so much that it is wise to be certain all have been provided for before purchasing.

The Complete Cycle.—Every internal combustion engine must accomplish four things for every power impulse. The fuel mixture must be drawn into the cylinder; it must be compressed; then fired, and finally the combustion chamber must be cleared of the burned gases, ready for the succeeding charge of fuel. Some engines accomplish this with one revolution of the crank, others with two. Probably 80 percent of all the engines in use are of the latter kind. Theoretically the two-cycle (that is, one revolution)engines are the best, but for practical field work the four-cycle have been most successful.

The Four-Cycle Engine, with its first downward stroke (assuming it to be of the vertical type), produces a suction and partial vacuum in the cylinder, as the upstroke of the piston does in the common lift pump. This vacuum is quickly filled by fuel mixture rushing thru the intake port. The second stroke, or ascent of the piston compresses this gas to a small part of its original volume and, at the highest point of compression, as the piston reaches the top of the cylinder, some form of ignition is introduced and the greatly condensed gas is fired and the third, or power stroke, begins; this is the second downward revolution of the crank and the third movement of the piston. With the fourth stroke of the piston the cylinder, filled at its beginning with burned gas, is emptied thru the exhaust or discharge port, which is now open. This fourth stroke of the piston, or second entire revolution of the crank shaft, completes the cycle. In practice, the four processes described do not begin and end exactly at the end or beginning of the strokes, the variation and extent of the lap depending somewhat on the speed of the engine. It will readily be seen from the above explanation that the term ''four-cycle engine'' arises from the fact that it operates on the four-stroke cycle plan. While engines of this style contain valves and moving parts that the two-cycle engines avoid, at their present stage of development they produce more power with a given amount of fuel and are generally considered more reliable and satisfactory.

The Two-Cycle Engine, as its name implies, performs the four operations necessary during one revolution of the chank shaft or during two strokes of the piston. Theoretically, it has a number of important advantages, and in time may become the more efficient and popular engine of the two. As it gets a power impulse with every second stroke instead of every fourth, there is less tendency to speed variations and it does not require such heavy fly-wheels to carry it thru the intervening periods. The power is also greatly increased, considering the size of the engine, because there is a power stroke for every revolution of the wheel. The valves are, in part, sometimes wholly, dispensed with, and the long chapter of valve troubles due to fouling, heat and various causes are avoided. The two-cycle engine is more compact and easier to handle. It has less moving parts and is consequently simpler to learn and to use, while there are less places for wear. It can be run at a slower speed than the four-cycle, or it can be run much faster. It is also smoother running.

Some of the advantages here enumerated are more pronounced in the single cylinder than in the multi-cylinder engine, while some makes show less difference than others. It is not possible, however, in practice to rid the combustion chamber of burnt gases as thoroly in the small part of a stroke devoted to it as it is in the full stroke of the four-cycle type. On account of this hurried blending of strokes, too, the two-cycle fails to take up a proper supply of fuel, and, tho it takes the charges, twice as often, they are not able to give out proportionately greater results. The crank case, too, is subject to wear and leakage and the engine loses fuel, compression and power. On the whole, the two-cycle engine presents more individual advantages than the four, but the points wherein the last is superior are so important and genuine that, as they now stand in development, the four-cycle engine seems to have the best of it.—Xeno W. Putnam, Crawford Co., Pa.

A STRIKING FEATURE OF CROP ROTATION

Crop rotation has been followed for many years on our farm, generally, however, in a more or less modified form. Five years ago we listened to theory which contended that by hogging off the corn crop on the same field yearly the fertility could be maintained indefinitely. This may be somewhat true in case of rich loams, but the kind of a field of corn that a man wishes to hog is the one that raises the inferior corn; so we tried the theory on a field mostly a tough clay, but with a sod to turn under. This field has been in corn or oats ever since, and has become poorer, rather than richer, during this time.

Our first extraordinary observation was that the tile began to refuse to take the water out of that clay soil. Three days after rain (and longer) the ground would be wet right over the tile, tho not over two feet deep. We condemned the tile and started to dig them up to correct the grade, but they were not clogged. Wherever we loosened up the soil by such explorations the oats were fine the following year. The fact is that the clay soil of that field has become so stiff thru over-cropping that water will not pass thru it. Hogs walking over the ground aggravated the condition. Being bare a large part of the time, especially in winter, every rain hammers and cements the soil particles the closer. The top covering of this soil is fast becoming air-tight; water can not pass thru and air can not gain access to render plant food available. No clover has been raised on that field for six years, and the channels in the soil made by deep-rooting clover have been obliterated by time. Manure placed on this field last year produced only meagre results.

This soil needs deep-rooting clover; it needs a covering from sun and rain. It should be plowed less often. It has since been a matter for observation by the writer that clay soils treated in this way always act the same; drainage becomes very ineffective. New tile systems in such soil will not do their work satisfactorily as long as the old lack of rotation is maintained.

On most farms there are fields that do not fit into the rotation scheme on account of size, generally. Oats do not fit into a rotation well, so it becomes an easy matter to alternate corn and oats on such a field, while rotation may be followed on the same farm with the larger or more productive fields. Our experience has taught us that if a field be small it should be put into the rotation plan with the smaller acreage, i. e., plow it the same year as the smallest field in rotation is to be put to corn. If the farm is large and the field too poor and unproductive to be put into the rotation, then get it down to grass and keep it in pasture till it can be improved by drainage, manure and more help.—Geo. P. Williams, Delaware Co., Ohio.

Live Stock

PROFIT FROM FEEDING STEERS

Most farmers can make more in real money if they will send their corn, oats and hay off the farm ''on the hoof'' instead of in a wagon. Every up-to-date farmer appreciates the advantages offered by a ''side line.'' Also the distinct merit in real fertilizer. It produces crops and builds up the soil fertility with lasting effect. The gain in making manure on the farm instead of hauling burnt-out, ''dead stuff'' a distance all will admit. Then, too, time and labor saved by delivering crops a distance is worth consideration.

Farmers complain that they find it difficult to purchase the grade of steers they desire. The best quality does cost more than it did formerly, but it brings a correspondingly higher price for the finished product. I insist on what I want and get it. The stock yards at Lancaster offer a prospective buyer the opportunity to select the proper grade. Before the western ranges were cut up into farms, cattle could be raised cheaper in the West than they could here. However, conditions have changed. I believe that the day is fast approaching when farmers will almost be compelled to raise their own stock. And when we begin to do this, provided our stock is bred from pure bred sires of the right breeds, then we shall reap an additional profit. Alfalfa and the silo system of feeding will assist to accomplish this end.

For the present, however, we must buy our feeders. We buy ours during October. The outside work is about finished and ''side-line'' profits begin. I always purchase two-year-old steers, dehorned. I insist that every steer show a fineness of bone, be wide between the eyes, wide between the fore-legs and have straight top and bottom lines. I prefer to sell my finished cattle in April or May rather than carry them longer, because my outside work begins and my time is required there. I try to get feeders showing large proportion of Angus or Shorthorn blood, with a preference for the Angus. Herefords produce good meat, but they do not put on the weight for me like the other two breeds.

To feed cattle successfully, it is most advantageous to raise the bulk of the grain, hay, straw and roughage on the farm. The number of steers a man can feed profitably depends, in a measure, upon the amount of crops he can harvest—his acreage under tillage. However, the price paid today for the finished product will permit a farmer to purchase a part of his feed and still show a profit balance.

When my cattle arrive on the farm, they are immediately placed in the barn. I have a space partitioned off large enough to accommodate 15 head. It is one long stall and the steers are permitted to run loose there. They are watered in the barnyard, where they get exercise twice daily. While they are outside, their bedding of rye straw is made and their food mixed. I do this because the cattle are fed from one long trough: besides it makes them eager to return inside. What corn fodder remains in their troughs is strewn on their bedding.

Hay and corn fodder are fed at first and the quantity is increased gradually. In a few weeks I add corn and cob meal, bran, crushed oats and cottonseed meal, all mixed together and fed night and morning, together with some roots. This food is increased gradually as market time approaches. I watch their droppings, and if it is neither too hard nor too soft then I am sure that the steers are in first-class condition and can stand an increased amount of food. The noonday meal consists of fodder, which is shredded.

My steers reach their full allowance eight weeks before they are marketed. Then each steer is fed 5 quarts of cob meal, 2½ quarts of bran, 1 pint of cottonseed meal and 2½ quarts of crushed oats, night and morning. At noon they get fodder, and the last week or two I give them clover hay at night. I give them rock salt. I prefer to feed salt this way rather than mix it in their grain, because they can get just the quantity they desire.

As regards the market, I prefer Philadelphia over New York, because the quotations fluctuate less. Then, too, I prefer to ship to a near-by market, because I know that it does not pay to ship steers a distance. It is surprising what weight they lose on the way. Usually, farmers sell their finished cattle alive, when market conditions seem favorable. If a farmer can go to market himself, I mean a public market-place, on Friday or Saturday of each week, he can sell at least one steer each week at retail, and increase his profit.

This side line of feeding steers pays me better than I can get by selling the same quantity of crops that I feed. Besides, the manure gained more than pays for the straw used for their bedding, and I have it on the farm without hauling. During the fall of 1910 my feeders cost $4.50 per cwt. In 1911 they cost $5.50. Last fall, $7.10. Now, while this price is a high figure to pay for ''feeders,'' they returned me a proportionate gain when marketed. As an example of what I do, I offer the following figures as an illustration: I purchased 15 head of cattle last October, whose average weight was 940 pounds, at $7.10 per cwt., or $66.70 a steer. These same steers were sold in April, weighing an average of 1,400 pounds, at 9.25 cents a pound, averaging $129.50 each. Their average gain in weight was 460 pounds.

The steers averaged a gain of $62.80 each, and I claim a profit on the whole transaction of $25 a steer. I have already stated, the manure more than pays for the straw used to make it. Besides, the profit can be increased by raising alfalfa and feeding from a silo. I have not gotten to these, and I simply show what a farmer can do without either of them, if he will purchase the proper grade of cattle and give them attention.—A. L. Roat, Philadelphia Co., Pa.

REARING ORPHAN COLT BY HAND

First of all, let it be understood that nearly every new-born colt runs a risk of losing its life from two principal causes. First, the bowels are invariably costive. The first milk taken from udder of mother acts as a laxative; consequently the foal that nurses receives the benefit of this laxative and unloads and eliminates the excrement which usually packs the posterior bowels quite full. It is very important that the orphan colt should be given a tablespoonful of castor oil and two tablespoonfuls of olive oil; or one or two ounces of olive oil alone. A glycerine suppository or a small piece of soap may be placed in the rectum to lubricate the bowel, or an ounce or two of olive oil injected gently into the rectum in order that this waxy excrement might be gotten rid of.

Immediately after birth the navel cord should be treated in the following manner: Wash the cord with a solution made by dissolving one ounce of carbolic acid in a quart of clean water, or use one part corrosive sublimate to 1,000 parts water. Then tie the cord with a silk or linen string that has been thoroly soaked in either of these solutions. The end of the cord should be saturated with Lugol's solution, which is composed of 25 parts iodine, 4 parts iodide of potassium and 800 or 1,000 parts water. Or you may apply a dusting powder composed of equal parts powdered alum, oxide of zinc, boracic acid and a little camphor added. I have also obtained very good results by applying 1 part iodine and 99 parts liquid collodion. There are many other home-healing remedies that seem to give good results, and if you have nothing else on hand, use the first mentioned lotion until the navel heals perfectly. It is needless to say that the stall where the colt is kept should be thoroly disinfected and kept clean and free from filthy bedding.

Now, regarding the food supply, which is cow's milk. Select milk from a healthy cow that has recently freshened, but be sure and add one-fourth its volume of boiled water. Also add a little sugar to each meal. Kindly understand that a very young colt should be fed every two hours until it is a few days old, then the time between feedings may be gradually lengthened. It must also be understood that feeding utensils should be kept scrupulously clean, giving them the same attention as is given in child feeding, for if this is not done, the colt is almost certain to suffer from bacterial infection of the bowels.

It is also important that the milk should be given at blood temperature. After the colt is a few weeks old, add some of the pulp made by boiling beans or peas or oil meal. Remove the skins by pressing the pulp thru a sieve. At 10 or 12 weeks of age the colt will eat considerable grass with crushed oats. When changing from fresh cow's milk to separator milk, it is necessary to reduce the quantity of milk fed for fear of inducing too much bowel action. I have thought that as soon as a colt would eat enough of other food, besides milk, it was no bad plan to discontinue the milk. A colt reared by hand can usually be weaned at four or five months. It is also important that the colt have the companionship of other colts, or horses. They do not seem to thrive or do as well when alone. This, perhaps, is on account of their not taking sufficient exercise and the bowels and kidneys not acting free enough. Besides, plenty of exercise induces appetite.

On my father's stock farm in Canada, many years ago, we attempted to raise orphan colts occasionally, but invariably lost some. This, I now feel was due to lack of knowledge, not only in feeding, but the early treatment of the navel. In some cases they died from joint ill, doubtless caused from navel infection, which can now easily be prevented. Furthermore, we were not painstaking enough in thoroly cleaning and airing their feeding utensils. We also failed to dilute their milk and did not add sugar. However, during the past 25 years I have raised orphan colts in the manner which I have described, and some of them appeared to thrive fully as well as colts raised by a poor milking mother.

During the time they were fed milk I found it necessary to give them an occasional dose of raw linseed oil, castor oil or olive oil, to open their bowels. It is also important to furnish the colt with plenty of clean drinking water. I invariably add a small quantity of salt to their daily feed; besides give them some cooking soda in their skimmed-milk.—W. C. Fair, V. S.

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Horticulture

PICKING SMALL FRUITS

On a recent trip thru the "back-country" sections of a considerable section of this state, I observed that a great many general farmers were taking up the commercial growing of some one or more kinds of small fruit, strawberries being the leader. From the general run of their talk, it would seem that the profitable prices at which all small fruits have sold for the past several years is responsible for this change, rather than the failure of the previously followed lines of farming. This is both good and bad; bad in that many of these farmers embarking in small fruit growing are doing so without a realization of its handicaps. The producing of, and the finding of a market for the crop of small fruits are not the most difficult and uncertain factors in this business. With most commercial small fruit growers, country over, the most trying and uncertain part of the business is the picking and the pickers. To the onlooker this seems a small matter, but to the experienced grower it is the big factor, and the beginner who does not wake up to its relative importance before his first crop is ripe will find the harvesting of such crop the particular "white elephant" of the entire business. All these small fruits—particularly strawberries and red raspberries—are very perishable produce, demanding to be harvested regularly and at the proper time if great loss is not to result. This requires a large number of hands—pickers, graders, packers—regularly, for a short perior each year. In the securing and management of this force is where every beginner gets some hard bumps. In other than very thickly settled communities, or those near large villages or cities, the mere securing of sufficient hands regularly is in itself quite a job. The "back-country" grower who is depending upon his neighbors' children and "women folks" for his picking force had best have some other source of supply looked up and in reserve—for the experience of many growers under such conditions justifies me in predicting that he will need this "outside" force by the end of the first week of the berry season. And the mere securing of numbers is not an end of the problem—the nature of the people that make up one's force and the satisfactorily handling of them in the field are of importance.

Recently the writer had a discussion of this point with one of the longest established, largest and most successful small fruit growers of eastern New York State. During his twenty-odd years in the business he has had many experiences in securing and retaining a satisfactory harvesting force. The result of these years of experience and experiment are embodied in his present methods of handling the harvest and the harvesters. One can hardly better describe his method than to give his own account of it, so I will repeat his own story—and perhaps it may be the means of saving much frayed temper and some dollars, too, of other small fruit growers—particularly beginners:

"The most serious question that confronts the commercial berry grower the country over," declared Mr. Vollmer, "is the securing of a sufficient number of pickers to take care of the ripe fruit without waste. In this particular, we are now more fortunate than many growers—more fortunate than we were years ago, when I began growing berries on the homestead farm—for a line of suburban trolley runs within a mile of our farms. Being located between three good-sized cities, we have seldom, more than a day or two a year, early in the season; and never yet so short of help that we could not handle our crop in good condition, by picking but six days a week in the hight of the season, even. It is the general impression, and a practice much followed, that in successful commercial berry growing the fruit picking must be done on Sunday, too, to save it. We have never lost any considerable amount of fruit, however, by our policy of never picking Sundays.

"We now employ 50 to 150 pickers during our entire season, which lasts from about June first to mid-August. We plan our plantings and selections of varieties of each kind of fruit so as to have ripe fruit right along from the beginning of the season until the end, so there is no vacation from the time picking begins until the wind-up in August. A few of our pickers come from the rural section about here, but the majority of them come out from the city of Troy by trolley, to the cross roads station about a mile from here, where we meet them every morning, at 6 and 6.20, with one or two wagons with hay-racks on, and haul them to the farms. On the way back from the trolley station the wagons pick up numbers of those that come from the section round about. Besides these, there are some families of five to eight from a near-by village that drive over in their own rigs—"family parties" we call them. Nearly all of them are women and children, the women especially coming to us year after year. You see, berry picking season means to these people a great deal—many of them could earn money in no other way, being either too aged and broken down or too young. Then, besides the money they earn and the fruit they eat, they have a pleasant and happy time in the open.

"Every year the women's societies of some of the smaller city churches come out to earn "their dollar" for some particular cause, but we discourage this, as such pickers are always less satisfactory help—they don't know 'how' as well as the regulars. But we treat the 'greenest' or littlest picker in the gang just as well, and they have just as many privileges as anyone among them. As a rule, the women and girls are much the best pickers, altho we have many boys from 12 to 15 years old who do excellent work. We find the boys harder to control while at work than the girls, being both noisy and always watching for a chance to have fun. And at noon, while the girls will gather in small groups and quietly eat their lunch, chatting with one another, the boys can hardly be quiet long enough to eat— with a piece of bread or meat yet in one hand, they begin to climb, box, wrestle, fight, tease the girls and keep things lively generally.

"Altho each of our three farms are run separately and independently, all are conducted just alike. Each farm has its own gang of pickers, a 'field boss,' two or three packers and one to inspect and issue tickets. We have found that we can work more successfully this way than to combine our forces, as 50 to 60 pickers are as many as one man can manage in the field, without confusion. Also this number of pickers about keeps one person busy giving out tickets and inspecting the fruit as it is brought in, and two persons busy crating and nailing it up.

"The field boss assigns the rows, giving one to two pickers, who work as partners thru the day. It is also part of his job to see that the fruit is picked clean, that no rows are skipped, that no soft or small or inferior fruit is thrown into the quarts, to keep order and to keep the pickers at work—all considered, it is the most thankless job in the whole business. The accounts are all kept with tickets, which are handed to each picker as they come to the packing shed with their trayful of fruit. The ticket given shows the number of quarts brought in. This does away with all accounting. The pickers are responsible for the loss of their tickets, and are only paid for the number they turn in on pay-day. We have found this the simplest and most satisfactory system. It is accurate beyond question, as each picker keeps their own account, yet they can not keep that account any way but correct. On the tickets are printed the number of quarts each represents, together with our name, and the tickets are of as many different colors as there are quart designations, thus they may be counted quickly and accurately. One, two, four eight, sixteen and thirty-two quarts are the denominations used.

"At the end of the season we always give our pickers a picnic; have a big time of it and treat them to watermelon, lemonade, etc. We find this practice a good investment, as it sticks in their minds longer than the money they have earned stays in their pockets, and induces the experienced pickers to come to us another year, instead of going to someone else nearer by. But thruout the entire season we try to treat them just as well as we possibly can, and have as much pleasure as we can along with the work. Such a policy not only pays in the long run, one season with another in the securing of many experienced pickers, but it also induces more conscientious picking with even the most selfish."—Clark Westford, Schenectady Co., N. Y.

LETTUCE GROWING UNDER SKINNER SYSTEM OF IRRIGATION.
On Farm of A. P. Seabrook, Cumberland Co., N. J.

FLOODING ASPARAGUS

The customary method of raising asparagus for the market is to set the plants in a deep, rich, fertile, cool soil, with a warm exposure. The land must be thoroly prepared, heavily manured—it can hardly be too rich—and thoroly tilled in late fall or early spring. The idea of having asparagus "beds" has long since become absolete, and it is now common to plant asparagus in rows as rhubarb or corn, for instance. And instead of tilling the soil with hoes and finger weeders, horse tools are now used.

The great aim is to secure a tender sprout of uniform size at each cutting. To obtain the best results, the soil must be carefully prepared, as before stated, fertilized and suitably watered to produce the rapid growth necessary to obtain a superior quality.

The asparagus roots run horizontally rather than perpendicularly. And it is well, therefore, to place the rows not closer than four feet. The plants are usually set in the spring, about three feet apart in a row, and are set deep, in furrows usually six or ten inches in depth; and the crown of the plant is covered with loose earth or old compost to a depth of two or three inches. As the plants grow, the trench is gradually filled.

The plants should grow two full years before shoots are cut; and it is best to wait until the third year or even the fourth before they are cut, to permit the plants to become thoroly established. The cutting should rarely be done after the first of July, after which the tops should be allowed to grow at will. And when the crop is harvested every stalk should be removed, making a clean cut.

By reason of these peculiar conditions, the asparagus crop in a given place comes to market substantially at the same period; and the market is thus liable to be overstocked, which necessarily results in low prices. It is manifest, then, that if the growth of the plants is retarded so as to bring the crop into market at a time when the demand is greater and the asparagus scarce, the prices will be correspondingly higher.

This may be acomplished by setting the plants in a bed prepared as above indicated, and preferably when the plants are three or four years old. The bed should then be flooded with water about six or eight inches deep, and maintained at this depth for about eight weeks, after which the water should be drawn off. This checks the growth of the plants, and it will be found that the quality will be much improved and the yield increased.

Good results have been obtained by flooding early in April and maintaining the water on the bed for about two months.

Asparagus treated in this maner will bring excellent results and prices on the market at a time when the supply of asparagus has been practically exhausted.—Fred H. Hayn, Washington, D. C.

SQUASH BUGS

Unfortunately two insects are included under this one common name. They call for radically different treatment because one—the Cucumber Beetle—is a biting insect, while the other, or true Squash Bug, is a sucking insect, which attacks melons, cucumbers and squashes. In combating the true Squash Bug, the small plants may be kept covered with cheese cloth over light frames, or hand picking of the large yellow eggs and of the bugs themselves in the early morning may be resorted to. After the crop is harvested the vines should be destroyed.

To avoid trouble from the Cucumber Beetle, plant an excess of seed and when the plants appear dust them with a mixture of one pound of paris green with 50 pounds of lime or cheap flour.—Division of Entomology, University Farm, St. Paul.

THE PLUM CURCULIO

The plum curculio, or the "Little Turk," is a very bad enemy of plums and apples. It hibernates as a mature beetle, and when the warm days of spring come it is ready for its first meal on the swelling buds. Later on the female attacks the young fruit almost as soon as formed, poking the eggs beneath the skin, and making around each egg the characteristic crescent shaped mark.

Arsenate of lead, three pounds to 50 gallons of water, applied when the leaf buds are swelling, again when the blossoms fall, and again two weeks later, will hold this insect in check. If the arsenate of lead is combined with the self-boiled lime-sulfur, or with bordeaux mixture, fungous diseases like shot-hole fungus of the plum and cherry, and scab of the apple, will also be kept within bounds.—Division of Entomology, University Farm, St. Paul.

Horticultural Queries.

This department is conducted by Prof. H. A. Surface, State Economic Zoologist. Questions answered and timely and practical problems in treatment and control of farm and orchard pests discussed. Our readers are given the benefits of the advice of one of the foremost authorities in the country in this department. Address all queries to Pennsylvania Farmer, Philadelphia, Pa.

A Spraying Outfit for Trees and Potatoes

Please inform me what is the best kind of a sprayer to get for spraying both trees and potatoes.—J. L. H., Washington, Pa.

In the first place, I do not know tha size of your trees. This must be considered in making a reply. If they are young trees, I certainly would recommend you to get a tractor sprayer, such as gives power from the wheels turning.

This is merely a barrel mounted on its side on a cart, with pump geared to the wheels, with an attachment for spraying about five rows of potatoes at a time; or the spraying attachment can be taken off, and two leads of hose can be put on for spraying trees. Where the trees are comparatively small, this will work all right. In the orchard for the first five to seven years it will be found quite satisfactory, and is exactly the apparatus that I use most in my large planting and find cheapest, and recommend to others. If the trees get larger, one can spray every other tree, or every third tree with it, and go over the ground again to spray the others. The reason for skipping the trees is that there is not enough power generated by the rotating wheels to spray all the trees after they have reached a fair size and demand that the apparatus stand still very long while the operator is spraying them. It is, of course, a good hand lever pump, with a lever attached to the outfit, and even tho it must stand still at the tree to spray it, it is possible to keep up the power and do the spraying with one man using this lever.

However, if I had an ordinary farm orchard of fully-grown trees, and wished to get the cheapest outfit for satisfactorily spraying the orchard and also potatoes, I would get an ordinary barrel sprayer of a kind that has an air chamber in connection with it, to give continued even pressure, which works by a handle like a pump, and has in it an agitator or stirrer to stir up the liquid. I would order two leads of hose, each 25 feet long, and two extension rods, one five feet and the other nine, or would use gas pipe for an extension rod, slipping it thru old hose in order to make it easier to hold it. This is the standard apparatus for an average farm orchard.

If you want something that will do more work, or do it easier, or be easily pumped, and yet have a hand-power outfit, get a vertical lever pump, which means one with a handle that swings back and forth as you push it horizontally from you. One man can easily work this all day for two leads of hose or two men spraying and not be tired out, as he would with a barrel pump. Of course, in the use of a barrel pump, one man must pump and another must do the spraying. It is possible to change occasionally as either becomes tired with either part of the work, if dosired.

For spraying the potatoes, if you have a barrel pump the proper thing to do is to get a crop spraying attachment, which costs only a few dollars. This consists of a horizontal pipe with arms and nozzle attachments over the rows, and a hose to connect the horizontal pipe with its nozzles to the barrel. Thus the barrel can be hauled in a cart or light wagon with the operator standing in the wagon or on the platform, and pumped by hand as the horse walks along. One man can easily operate the barrel pump with a crop sprayer attachment, and at the same time drive a horse, if he has a horse that is a leader, such as every satisfactory farm horse should be. There are several manufacturers of spraying apparatus, and I recommend that you write to them for descriptions of their outfits and their prices.

Fertilizing Young Trees

Would you recommend boiled meat from a fertilizer factory for trees? Would it be too strong to plant with peach, pear and apple trees? How much could I use to put in a hole for one tree?

Also, can I get raw shin bones ground up for the same use? Would the oil from the bones do any harm? This is a poultryman that grinds the bones and they are all fresh.

So please state how much to use to a tree. I am going to plant 700 trees this spring.

I am using lime-sulfur solution for spraying, 36 lbs. sulfur, 46 lbs. lime, 100 gals. water.

Could lime and sulfur be made too strong for trees in the way I use it?—A. E., Reading, Pa.

Meat scrap is one of the best fertilizers you can get. It is not too strong to use anywhere, if you do not use a great deal of it. Never put any kind of fertilizer in contact with the roots of plants or trees in planting them. It will be all right to put some in the hole where you expect to plant the tree, and then put in some good earth, and then put in the tree and again put good earth on the roots, and then put a handful of fertilizer on top of this before filling the hole entirely. A handful or two to each tree is sufficient.

As a rule I do not like to use any fertilizer in planting, as a soil that is not able to start fruit trees in the right way without fertilizer is not a good fruit soil; yet it is possible to push trees along by a nitrogen fertilizer which is good. Also, raw ground bone is all right. The oil from them will not cause them to be objectionable. I would use only a small quantity of this material as it is concentrated and strong.

You are using your lime-sulfur very strong. The formula I would recommend is to boil two pounds of sulfur with each pound of lime for each gallon of water, for one hour or a little less, and then dilute this with six or seven gallons of water when you are ready to apply it; altho I do not think that your formula or any other strong lime-sulfur formula will cause any injury to any tree, bush, shrub or plant, if applied while dormant. In other words, I have never known of the lime-sulfur solution being applied too strong to give unsatisfactory results, but it is possible to spray it strong enough to be wasteful.

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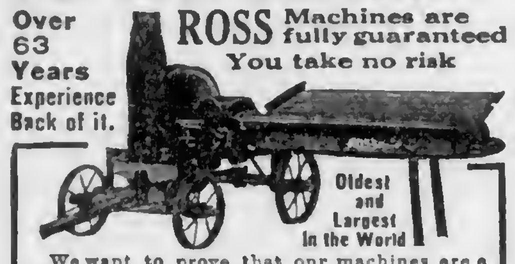

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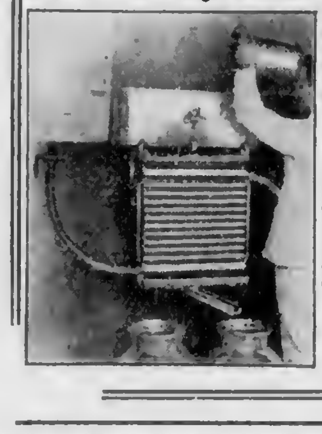

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The Dairy

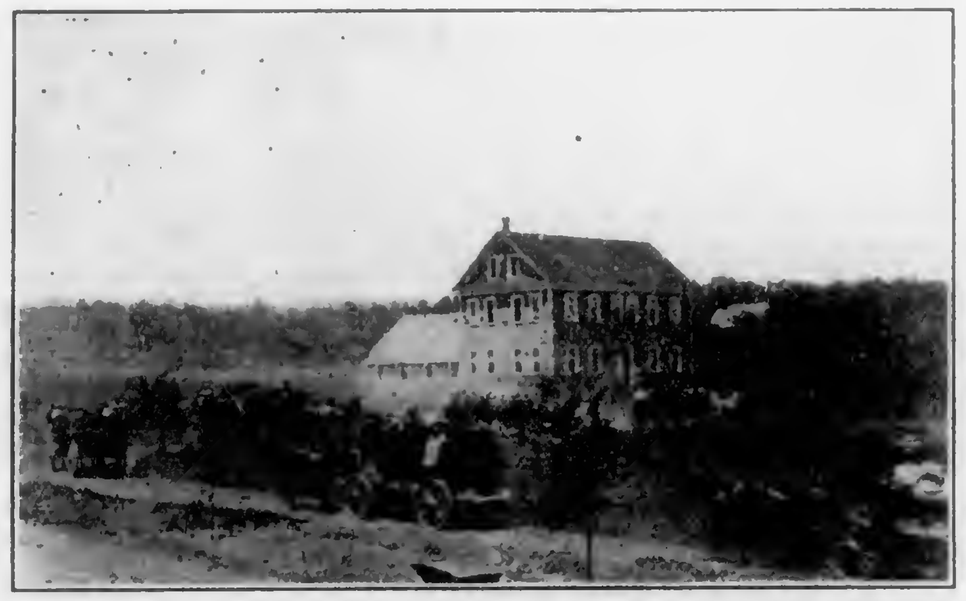
INDEMNITY FOR TUBERCULAR CATTLE

In the last few years, in fact, ever since the passage of our present law granting indemnity for the killing of tuberculous cattle, there has been constant agitation on the part of a number of our Pennsylvania dairymen to get a higher indemnity than the present law allows. A bill or bills to this effect are before the present legislature. Whether any are likely to become law I do not know, but I have felt all the while that the present law is about what we need and all that we can rightly demand.

It is true that in the strictly dairy sections of the state, where the range of prices is the highest, an indemnity of $40 for a grade and $70 for a pure bred seems to be too small, even with the value of the hide and carcass added to the money indemnity. But a state law is to cover the whole state, and if the damage allowed by the law were high enough to meet market conditions in the communities where the highest prices prevail, it would be entirely too high for neighborhoods where little attention is paid to the dairy business. A state law has to strike an average condition as nearly as possible if it will stand as a just law.

There seems to be a great deal of misunderstanding as to our present law, or else there are a number of interpretations that hold in different parts of the state. We were unfortunate in having to kill a lot of cattle some years ago for tuberculosis, but we were thereby compelled to study the law and know its interpretation. Just here we want to say that it is entirely possible to get clear of this disease, and it does not take so long as many would suppose, in face of the proclamation made by some that the more you test the more you have to kill. We were given a very aggravated case of tuberculosis thru a bunch of young purebreds we bought. They were tubercular and apparently so loaded with tuberculin that we could not get a reaction, because in a test of our whole herd a few weeks after these cattle were bought the whole herd seemed clear, and as it was the first time our herd had been tested, we feel sure that had those been affected that had been on the place some time they would have reacted.

Feeling that everything was all right, and rejoicing in a clean herd, we allowed these heifers a place in the herd with no suspicion for nearly a year. Then one of them suddenly died, completely filled with tuberculosis. A little later, four out of these five heifers were found in the last stages. But the point is that altho we began to buy new stock within a month after killing off that bad infection, we have not since lost a single animal that came in after the barn had been carefully disinfected. And the satisfaction at calving time and the general productiveness of healthy animals leads me to the conclusion that it is decidedly foolish for anyone to allow tuberculosis to remain among their cattle.



VISITING FARMERS STARTING ON AN INSPECTION OF THE STATE COLLEGE FARMS, AT RECENT FARMERS' EXCURSION DAY.

But many will say that the financial loss is too great. Not so under our present law for killing diseased animals. In the first place, the law does not give the state the right of appraisement, but the state officer and the owner agree on the amount of indemnity, and if not, arbitrators can settle the matter. The appraisement should cover the entire value of the animal as she stands in the stall, outside of the fact that she has or has not tuberculosis. We will say that No. 1 is a grade and would bring on the market as she stands $80. No. 2 is a purebred and is worth $150. No. 3 is a grade, worth $55. No. 4 is registered, but because she is in bad condition, would not bring, if put on the market, over $75.

Under the law, then, what would the owner of the cattle expect to realize if those animals should be slaughtered? No. 1 would bring $40 from the state, as $40 is not over two-thirds the value of the animal. Then the hide would bring about $4.50, and the carcass, if it is not filled with generalized tuberculosis (which would have to be ditched), would bring $25 more. That would make, all told, $69.50, all of which the owner would get, as it does not exceed nine tenths the total value of the animal. And surely that is a fair remuneration for an animal that would probably die in a year or two at any rate.

No. 2 would work out about this way: If generalized tuberculosis is found, the indemnity would be $70 and the hide about $4, making a total of $74. If not generalized, there would be an additional $25 for the carcass, making $99 for the animal. No. 3 is appraised at $55. The state would not pay over two-thirds value, possibly not more than $30, which, added to the $4.50 for the hide, would be about the limit, if the disease is generalized on examination after slaughter. If not generalized, an additional $20 for carcass makes $54.50. As that is more than nine-tenths of the total value, the owner would be allowed only $49.50, but that is a fancy price considering that the animal has a deadly disease.

It is because we have been able, years ago when meat was not as high as it is now, to realize about such prices as we have here worked out that we feel like upholding the present law. It will never do to pay full value. We had such a law once, and it was so abused that we had to submit to that $25 and $50 law instead, with no hide or carcass added, and it was simply robbery. And if we have the indemnity so high that unscrupulous people will abuse it largely, it is bound to bring a reaction in legislation that will take away splendid assistance from those who wish to have a herd clean of this dread disease.—John A Mc-Sparran, Lancaster Co., Pa.

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A LIVE HOLSTEIN MEETING

The Holstein-Friesian Association of Chester Co., met at the home of C. Fremont Wickersham, Unionville, Pa., on Saturday, June 7, with over 60 men present, nearly all breeders of the "black and white." This was the first annual meeting, and the enormous growth of the organization since a handful of men about one year ago met and gave it its start, denotes a future for the Holsteins in Chester County that must be a factor in her dairy interests. It was reported that a breeders' directory had been issued and thru its influence several sales had already been effected, with many more inquiries for stock than could be supplied by the 40 members.

The financial condition is good. The total income for the year was $199.43, and after defraying all expenses to date there was left in the treasury the neat sum of $40.99. The election of officers resulted as follows: President, Horace L. Way; vice-presidents, Lee McClure and Chas. J. Garrett; secretary, Philip M. Hicks; treasurer, John Hicks. The president, in his inaugural remarks, stated that at the second meeting, held last August, advertising was started and it was then that the society began to grow. The banner meeting of the year was held at West Chester in February. He said it behooves the members of this association to submit to the tuberculin test in order to be able to do interstate business, and all should keep a yearly record of their cows' performance, which would help in making sales. The business meeting adjourned and the company was served with a delightful luncheon of good things, ending up with ice cream and strawberries.

During the noon recess we were shown one of the best-working herds in Chester County, consisting of 120 cows and about 20 growing stock. There were 88 cows milking, giving an average of 40 pounds of milk per day. The herd in its make-up and performance shows the direction of a master hand.

The afternoon session was called to order at 2 o'clock, and the subject of tuberculosis was discussed by Dr. Benj. Price, of West Chester, and Dr. M. E. Conard, of West Grove. The subject was divided into two divisions, "The entrance, growth and effect of the germ in the animal's body" and "The recognition, control and eradication of the disease from our herds."

Germs and Their Work

Dr. Price discussed the disease from the bacteriological and pathological standpoint. He tried to use as few technical terms as possible, and in this he succeeded well, explaining how and by whom the tuberculosis germ was discovered and some of the early theories held regarding it.

In cattle the disease is seldom inherited, except in cases of tuberculosis of the uterus, altho it was formerly thought to be transmitted almost entirely by heredity. The germs of the disease, however, are notably tenacious of life, and can live for a long time thru extremes of heat and cold. Dr. Price told how the germ in passing thru the body of a man, or warm-blooded animal, finds lodgment and causes the disease so much dreaded. It can be breathed in, or it can be taken into the alimentary canal, and in either way is dangerous to the animal.

Considerable of a scientific interest was told, the cattlemen being eager to grasp it all and tuck it away in their minds for use at some future season. The germ was traced from the time it enters the body until it finds a place to lodge and makes its home, and the lesions begin forming, and the disease may be considered as fairly contracted. Incidentally he explained how meat from some tubercular cattle is fit for food, while meat from other cattle is not fit. The difference is that when the disease is localized, then only the local portions are affected, but the rest of the carcass may be eaten. When the disease becomes general then the meat is unfit for food.

Treating the Disease.—Dr. M. E. Conard opened by saying that times have changed greatly, for only a few years ago should a man have given a talk to farmers as full of technical matter as Dr. Price's had been, the farmers would have been ready to drum him out of the meeting, whereas the farmers who had just listened to Dr. Price had heard him gladly and given him a cordial round of applause.

Dr. Conard turned to the great importance of taking care in the subject of tuberculosis, saying this is the great menace to the stock, as it limits the profits of the dairyman and the efficiency of the herd. Tuberculosis is liable to appear anywhere among beef cattle on the range or among the dairy cattle in the herd, in the stable or pasture. In the dairy it is all the more liable to appear as the cattle are hard worked and are often kept under improper conditions. Fresh air and sanitation are a help in prevention, but the germ really thrives under so-called sanitary conditions.

So stealthily do the changes come on that the dairymen can scarcely notice them from day to day. The proper way to meet this disease is thru intelligent treatment, the dairyman having some knowledge of what goes on in a pathological way inside the cow. Physical examination, as sounding the lungs, feeling the superficial glands, etc., is of practically no use, for the reason that when a cow is so far gone that she will respond to this test, she is in a condition when the owner should get rid of her. Really, the only way to get at the knowledge of facts is by the tuberculin test. Dr. Conard told how the tuberculine is made in the laboratory, to be used in making the test, how it is applied and what are the results on the animal, also the best means of taking care of a herd after the unaffected animals are removed to new ground.

Where dairymen deal with high priced animals, it is worth the trouble and expense of removing all the animals which are free from infection There is only one way the disease will spread, and that is by the germs. The presence of filth alone will not develop tuberculosis, for it is as preposterous to think of developing the disease without the germ as to raise a crop of corn in a field without planting seed.

When questioned about the open-air treatment as a prevention of the disease, Dr. Conard replied that this is good, but the treatment given a cow with tuberculosis is entirely different from that given a person with tuberculosis. Another interested member asked about the possibilities of transmitting the disease thru the testing. The reply was that there are ways to guard against this by care in disinfecting.

Breed Recognition.—By a recent amendment to the Department of Agriculture regulations governing certification of recognized breeds of purebred animals, the Thoroughbred breed of horses with stud book published by the minister of agriculture, Paris, France, is now recognized in this country.

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"make good" because they're made good. And they've been getting better every year for 15 years. If you want to be treated right, order a Kalamazoo now. We prepay freight. Get our catalog; it tells the whole story. Address Dept. 31
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INTERNATIONAL SUGAR FEED COMPANY
M. W. SAVAGE, PRES. MINNEAPOLIS, MINN. (1)

Poultry

INDIAN RUNNER DUCKS

The Indian Runner duck has rapidly forced its way to the front in the past two years. Breeders are striving with one another in an endeavor to bring this breed to a hight of popularity that no other water fowl has reached, and they are meeting with great success. When a boom is started among fanciers, there must be quality in the make-up, or the boom falls flat. The fact that the Indian Runners are prolific layers of large eggs is the direct cause of the present boom. Even in severe weather (midwinter) which is the acid test with poultry of most kinds, the Indian Runners will lay, if made comfortable and given the proper care. A good house and sufficient bedding to rest on is very necessary.

The following ration is one which we have used with great success and has proven a good egg producer: 1 part wheat bran, 1 part corn meal, 1 part beef scraps, 1 part white middlings, and 2 parts alfalfa, by measure.

It might be said that the Indian Runner is still in its infancy. There are many of these ducks advertised as the true fawn, but only a limited number of good ones can be found. We find many misconceptions of the essential features of the breed, particularly in the show room. We frequently hear a spectator say: "I have as good if not better ducks at home than that first prize winner." If you question him, you will find that he has never had a duck on exhibition, and if inspection is made you will find that his knowledge of Indian Runner ducks is limited. He may be perfectly sincere in his belief, and really have confidence in his stock as being the real thing. If he finds a ready market for his eggs among a certain class, he feels he has a Standard of Perfection all his own. While all duck raisers do not want show birds, show winning strains are always the safest in purity of breeding and perfection of quality.

We do not believe it is advisable to force breeding stock during the winter. We believe that if you keep forcing for eggs the year round, you can not expect to have good, fertile eggs and strong ducklings in the spring. But if you do not care for the hatching quality you can get good results in eggs at any time by proper care and food. If it is the desire of the breeder to look to a constant egg supply, he will find that the Indian Runner, like the Leghorn fowl, will produce eggs the greater part of the year.

PRINCE BEAU IDEAL.
First Prize Winner at Buffalo International Show.

Some breeders have claimed that the true fawn of the American Standard will lay a green egg, and for that reason the English type is in favor. A movement is under way to bring the English varieties back to the Standard, thus having the two varieties admitted. We believe the fawn duck is an improvement on the English type, and that the fawn duck has come to stay. The appearance is much superior, if you have the correct shade. A golden ray running thru the fawn, with no signs of being laced, is our ideal. If you have in view a layer of white eggs, it is absolutely necessary that you purchase white eggs for hatching. In order to produce the best results and largest profits, it is necessary to purchase good stock.

Start right by securing the best, altho costing a trifle more. You will always have the satisfaction of having commenced right, and by so doing made an early start with the right stock. We advise the beginner to use hens for hatching. Choose a warm place in early spring and a cool place in summer. Indian Runners take 28 days to hatch. If the weather is dry, sprinkle the eggs frequently, especially the last week, always using lukewarm water. Test the eggs on the 9th, 18th and 25th days. Throw out the dead germs, as well as the infertile eggs. Powder the hen each time you make the test, and have a variety of food before her at all times.

PRINCE NULLI LECUNDUS.
A Madison Square Garden Winner.

We remove the ducklings from the nests as soon as dry, and place in a warm basket by the fire. If you have a brooder, put them into it. Do not feed the ducklings for 48 hours after hatching. Bread crumbs soaked in milk and squeezed dry, are all that is necessary for the three days following; then add a little bran and shorts, making a sticky mash. Later use no bread, but add corn meal, beef scraps and clean sand. When three weeks old, use the following formula, by measure: 1 measure wheat bran; 1 measure corn meal; 2 measures shorts or white middlings; 1 measure alfalfa; ¼ measure sharp sand, and ¼ measure beef scraps.

The succeeding three weeks, add more beef scraps and a little bone meal. Always have charcoal, grit, shell, grass and water before them. These things are essential and should never be neglected. Young ducklings are subject to rheumatism, caused by getting wet, and sun stroke, by not having shade. Preventative is the only remedy in both cases. Indian Runners never need swimming water, altho it will do them no harm after six weeks old. In the breeding season separate the good stock from your utility. We have found a piano box a good coop for small pens. Lay the box flat, with the incline part on hinges in the side. Have a window in the front. Cover the entire box with tar paper, with the exception of where the door hinges are, leaving an open crack, which should be covered with a waterproof pliable cloth, which will prevent all dripping. This insures a cheap and reliable coop.—Emil A. Gabel, Morris Co., N. J.

GETTING THE GOSLINS STARTED

The common advice as to time for hatching geese is that they should not come from the shells until grass has secured a good start. In other words, grass is one of the essentials to the successful rearing of geese. Many growers give the goslings access to nothing but grass for the first two days of their existence, after which they are gradually put upon a ration containing some grain but in which grass is still a prominent factor. In this latitude, then, it is not desirable to have geese hatched before April, and even the fore part of that month is pretty early, as the ground is still damp and cold. Where hatches are brought off before conditions are right for safely placing the goslings in a movable pen upon a good grass plot, a good way is to keep them in warm and dry quarters for a week or two, supplying the necessary green food by cutting a sod from the glass plot and placing it before them. Growers who practice this find it the safer way, since freshly hatched goslings are more quickly affected by improper conditions and ill treatment than any of the other inhabitants of the poultry yard, a fact which is difficult to appreciate for the reason that in the course of a few weeks they become the most hardy.

After the second day a grain mixture of one part corn meal and two parts shorts is a favorite with some raisers. Good results have also come from feeding lightly of scalded corn, with an abundance of grass and good water. The Ontario station reports satisfaction from the use of equal parts corn meal, wheat bran and middlings for the first two weeks, followed by a mixture of two parts wheat bran and five parts middlings for the succeeding four weeks. It is best to keep them penned up for several weeks, even if hatched after warm weather has arrived, and it is absolutely necessary to keep them out of water for this length of time, and even longer if they are hatched early. Also, they must be fully protected from wet until well feathered, and even then exposure is harmful.

When two or three weeks old they may be given limited range on good grass, but the grain ration should be continued, feeding often and but a little at a time. Several weeks later they should be sufficiently hardy to be safely given the range of the farm, by which time it should not be necessary to feed oftener than twice a day and, later, only once a day. It is not desirable to keep them fat from the first, unless they are to be sold as green geese, in which case they should be kept plump from the start and sold as soon as ready for market. Where grown for the winter market, or for selling as breeders, however, the object in the early part of the season should be to get the largest possible development of frame, and for this purpose there is no feed that excels grass.

COOL DRINKING WATER

Poultry suffer intensely during hot weather if not provided with shade and plenty of clean, cool water. A fresh supply should be furnished several times a day during the dry, hot months. The following method, in regard to drinking water, I have found to answer admirably for this purpose: Old pitchers, that have spout or handle broken off, earthenware crocks, etc., that will hold at least two quarts. I dig a hole in some shady part of chicken yard and sink the vessel slantwise, nearly level with surface; then I lay a board over the exposed part above ground, letting about 12 inches project above the water. This prevents litter being blown into it and serves as a shade also. The damp earth underneath and around it will keep the water cool for a considerable time.—Renice Radcliffe, Maryland.

BEES for the FARM Need little attention and pay big profits. If you are interested in them send for a sample copy of Gleanings in Bee Culture. Also a bee supply catalog. THE A.I.ROOT CO., Box 393, Medina, Ohio

POULTRY

"Red Quill" Rhode Island Reds, both varieties, White Leghorns, White Cornish, Partridge Wyandottes, Indian Runner, Pekin and Rouen Ducks. Ohio State show 1913, won nine awards on 11 entries. Only high class stock, eggs to set, prices reasonable.
Cary's Poultry Farms, Trimble, Ohio.

Gaebel Bros.' Golden Fawn Indian Runner Ducks. First at Phila. and N. Y. Also White Leghorns. Advice free. Eggs, Chicks, Ducklings at lowest prices. Box 62, Morristown, N.J.

Single Comb White Orpingtons, eggs for sale $1.50 per 13; $10.00 per 1000. Fine pure white birds. The Alba strain. Address
ROY CRANDALL, Albion, N. Y.

DON'T BUY CHICKS—BUY EGGS FROM US CHEAPER. S. C. White Leghorns or Barred Rocks. None better $1 for 15; $3.50 per 100.
PARADISE POULTRY FARM. Paradise, Pa

Turkey Eggs by parcel post or express, Mammoth Bronze, Narragansetts, R. Reds and W. Holland. Your choice $3 per 12. Prompt attention given. Walter Bros., Powhatan Point, O.

EGGS—Barred Rocks, bred to lay strains. Runner Ducks, silver cup winners, $1.50 per setting postpaid. Nelson's Poultry Farm, Grove City, Pa.

1200 BREEDERS FOR SALE
S. C. W. Leghorns Imperial Pekin Ducks
Cocks $2.00; Hens $1.00, Drakes $3.00; Ducks $2.00
We are offering the above stock to make room for our young stock. These birds are excellent breeders.
Pen-Y-Bryn Farm, F.A.Tiffany, Supt.Bx36P, Ambler, Pa.

CHICKS
S. C. W. Leghorns, 7c each. Will ship C. O. D. Will return money for dead ones. Pamphlet on chick feeding free. C. M. LAUVER, Richfield, Pa., Box 43.

NO MORE HEN LICE Avenarius Carbolineum exterminates lice, mites, fleas and other insect pests on poultry. One application lasts 12 months or more. Prevents scaly leg, keeps the skin in good condition and makes hens lay better by removing irritating and blood sucking vermin. Poultry houses painted with Avenarius Carbolineum are absolutely sanitary and vermin free. They last longer. Avenarius Carbolineum can be applied as a spray or paint. Always keep a supply on hand. Be sure and get the genuine. Ask for AVENARIUS. If your dealer hasn't it, write for Bulletin 33, giving full directions and prices. CARBOLINEUM WOOD PRESERVING CO., 195 Franklin St., New York City

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will be given in exchange for a little of your time in interesting your friends in Pennsylvania Farmer.

This is one of the latest editions of the Bible, beautifully printed on thin bible paper; special black letter feature, with words of Christ printed in heavier type than the rest of the text; maps of the Holy Land printed in colors, and a great number of special engravings. Complete Concordance. Durably bound in black flexible Imperial Seal, Divinity Circuit, gold back and side titles, linen lined, red under gold edges.
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PENNSYLVANIA FARMER, 214 South 12th Street, Philadelphia, Pa.

Grange

This department is conducted by R. P. Kester, Lecturer of Pennsylvania State Grange. Notes, queries, comments and news of grange work are invited from readers. Obituary notes and news of purely local interest can not be used. Address all communications for this department to R. P. Kester, Grampian, Pa.

SUBJECTS FOR CO-OPERATIVE STUDY

Good Seed.—A good live grange in a community offers a splendid opportunity for the farmers in that community to pool their interests as well as their knowledge. A personal letter from a fellow patron tells how the problem of growing and furnishing good farm seeds is being worked out. After the subject was thoroly talked over in their grange meetings, and the necessity of good, acclimated seed, seed suited to the climate and soil of that community was realized by every member, a member having a suitable farm and having the necessary knowledge and intelligence was encouraged to go into the business of raising seed corn, seed wheat, seed potatoes and seed oats.

This is a problem that needs attention in every neighborhood. Farmers are fully alive to the advantages of well-bred stock, but have not given much attention as yet to the breeding of their farm seeds, and yet the same laws of improvement by breeding hold good there. Seeds that have the prepotency to produce their like and are from heavy yielding specimens will work wonders in increasing both quantity and quality. Very few farmers have the patience or will to do this work for themselves, even if they have the knowledge. Seedsmen are not doing this part of the work for us. Even if they can be purchased from some foreign locality, they are not so desirable because they have not been acclimated. This is sufficient reason for taking up this work in the locality and holds good especially in regard to corn and almost every other crop, with the possible exception of potatoes.

The man in the neighborhood who takes the pains to thus breed seed of quality need have no fear that it will not be bought by his neighbors.

Adaptability of Crops.—Another co-operative work that is open for grange consideration is a careful study of the soil, climate, markets and capacity of the farmers with a view of finding out what crop or crops are most profitable and best adapted to that neighborhood. A careful study of the possibilities and adaptabilities and farming done accordingly, would make many a community prosperous that is not now so. The old routine of crops and products, regardless of their adaptability and the demands of the markets is keeping many farmers poor. They attempt to raise a little of everything, with the result that there is no special money crop, as it takes about all that is produced for farm and family consumption. Every grange might do well to talk over this subject in every way, or, what might be better, appoint a committee to take the matter up carefully and report from time to time.

There are so many problems that need the co-operative efforts and study of the farmers enmasse. In fact, everything that concerns us individually, concerns us collectively. The old idea of seeking individual salvation in any form by working alone, is done away. We realize now that the community and not the individual is the unit, and that the community extends to the farthermost ends of the earth. Let us work together.—R. P. Kester.

ROAD BOND EVIDENCE

As an evidence of what may happen, and is very likely to happen, in the political administration of a large road-building fund, the experience of New York may again be cited. The new state highway commissioner, John N. Carlisle, said in an address soon after taking charge of the department: "We are issuing 50-year bonds to build roads that won't last three years. If the present system were continued, after the $100,000,000 bond issue had been exhausted, the state would be called upon to expend $20,000,000 a year for maintenance. We are now spending $3,000,000 a year for maintenance and contributing to the towns $2,000,000 more. When the $100,000,000 is gone, it will take, as I have said, $20,000,000 to keep the roads in passable condition."

On taking charge of the highway department Commissioner Carlisle found it in a state of chaos. There was no system in the management of it, and no one seemed to have any sense of responsibility. His first work was to get things running systematically in the department, and then he began cancelling illegal contracts. He found that there were 19 pieces of road on which work was being done, the contracts for which had not been signed. He discovered that the men were told to go on with the work and the contracts would be signed later. He ordered the work stopped. Speaking of the many supplemental contracts that had been made, Mr. Carlisle said that he was asked to sign them, but he found them always increased in price over the original. Some of these changes, he said, had been made within 30 days after the original contract had been let, and always with the addition of from $10,000 to $25,000 in the price. He referred in particular to one road in his own county, where the original specifications were so drawn that it has been admitted by the contractor that it will be impossible to build the road so that it will stand and it will cost $8,000 to make the necessary changes.

Mr. Carlisle states it as his belief that the maintenance problem is a much more difficult one to solve than that of construction. He made a visit to Massachusetts to get some information on road matters, and found that it costs only about $300 or $400 per mile in that state for maintenance, whereas in New York it has cost between $7,000 and $8,000 per mile, for the reason that the road is not substantially built and goes to pieces in a short space of time. He refers to one road in this state which it cost $50,000 to build in 1909, on which $6,000 was expended in 1910 and $52,000 in 1912.

It is quite evident that the new highway commissioner has a job on his hands, but if anyone can solve the attendant problems he can. That all the extravagance, waste and graft that has been shown up was pretty largely due to the mixing of politics with the road question is the general belief.—J. W. D.

FROM PRODUCER TO CONSUMER

A Maryland Plan

The Maryland State Grange has been sending out an advertising sheet every other Thursday since February 6th of this year. This paper is entitled "Trade Notices," and is a medium of advertising any product that a member may have for sale, or give notice of what he wishes to buy from other patrons. These trade notices are sent to every grange home in the state and to organizations or individual consumers in cities. No charge has been made for notices of not over two lines. When the publication is established, it will very probably be necessary to make such rates as will cover expenses. This is a progressive idea, and we hope will have the earnest support of our grangers.

The call of the time is for co-operation. Here is a splendid opportunity to bring producer and consumer together and to deal with very reliable people. In the first issue of our Trade Notices, I noted Rhode Island Red eggs for sale. I immediately made a purchase, feeling sure of quality and reliability, and having the added pleasure of buying from a patron. I do not claim that Maryland has taken the initiative in this matter. Some other states may have had this system long ago, but we are all glad that we have it now. It provides an opportunity to make use of postal service in trade. You may have meat, butter, eggs, honey, country sausage and scrapple in season. A recent news item told of a New England woman living in a city, ordering a dinner sent her from a certain farm in the country— two chickens, vegetables and one dozen fresh eggs. These were mailed the first day of parcel post delivery and arrived at the purchaser's home the following day. The baking chickens came prepared for the oven; the potatoes, carrots and winter cauliflower were all raised on this farm; the eggs were fresh—a luxury in January. There are suggestions in this case for all of us.—Elizabeth O. Jean, Maryland.

NEW GRANGE MAKES RAPID GROWTH

Our sister grange states have recently been indulging in some big figures concerning the rapid growth of some of their granges, and the size of their classes. Pennsylvania may not have had the largest class, but she recently presented one of the best classes that the writer has ever instructed. Ginger Hill Grange No. 1549, Washington County, was organized by Worthy Deputy J. W. Cleaver, in December, 1912, with 56 charter members. On May 20, E. B. Dorsett, Worthy Overseer of the State Grange, assisted Worthy Deputy Cleaver in conferring the third and fourth degrees upon a class of 50, making the total membership of this grange 135.

We not only consider this a large class, but think that the grange deserves much credit for the growth it has made since its organization. Plans are being considered for the erection of a new hall, and a juvenile grange will be organized just as soon as a suitable room can be had in which to meet. The grange has joined the Keystone Exchange, and will soon begin co-operative buying and selling. Much interest is manifested in the degree work, and the grange is truly a "Live Wire." —E. B. Dorsett.

AMONG THE LIVE POMONAS

Center County Pomona.—The editor of Pennsylvania Farmer, in company with Dean Watts, of State College, enjoyed a brief meeting with members of Center County Pomona, in regular session with Washington Grange No. 157, on June 5. The cozy little grange hall was filled to capacity and the meeting, under the leadership of Pomona Master Leonard Rhone, spent a profitable and enjoyable day in the discussion of questions of grange interest. The address of welcome was given by Dean Watts, who was compelled to leave early to meet the excursion visitors at State College. Washington Grange has recently been reorganized, but it is showing a vigorous interest in general grange affairs which promises well for its future growth.

Schuylkill County Pomona.—The Schuylkill County Pomona Grange met at Pottsville, in quarterly session, June 7. A public meeting was held in the afternoon, the features of the session being talks by C. H. Dildans on "Organization the Only Safety of the Farmers," and by W. H. Stout, on "Farming and Farmers." Brother Stout pointed out that the prices of farm commodities have shown a marked decline the past year, yet farmers are urged to increase production. He declared that only increased profits could bring out increased production. He stated that Pennsylvania farmers spent $8,000,000 for fertilizers last year.

Warren County Pomona.—Warren County Pomona met with Akeley Grange, June 5 and 6. A profitable two-day program was given, taking up many questions of practical and general interest. Brother Green gave a very helpful talk on conservation of soil moisture. Other questions which brought out good general discussions were: "Which does the farmer most need, less land, more help or a better education?" "Restoring worn-out farms" and "Potato culture." On the last subject, Brother Duntley gave some very interesting observations on varieties for our county. He advised the use of the American Wonder and Beauty of Hebron. Centennial Blue has not proved so satisfactory as a market potato. A class of 17 was initiated in the fifth degree. An interesting and profitable woman's hour was held, devoted to discussion of various household subjects. The patrons were royally entertained, and all went to their homes with many pleasant memories of Akeley people and the occasion.—Alice Bumpus.

SOME GRANGE NOTES

National Grange Matters.—The executive committee of the National Grange met in Peoria, Ill., on June 16, to consider routine business, and there will probably be no further meeting until just prior to the meeting of the National Grange in November. State Master Pattee, of New Hampshire, is authority for the statement that New Hampshire alone is likely to furnish 2,000 candidates for the seventh degree at the National Grange meeting. That means that the class will number at least 3,000, as other New England states and New York will furnish 1,000 beyond question. National Master Wilson will begin his itinerary for the summer field meetings July 20 and he will visit Kentucky, Pennsylvania, Connecticut, Massachusetts, New Hampshire, Maine, Missouri and close in Iowa about September 10. He will also attend the Grange Day exercise at the New York state fair and the Farmers' National Congress at Plano, Ill.

Grange Corn Clubs.—The Jefferson Pomona Grange, New York, met June 4. Cash prizes were voted for the corn show in Canton next winter and they will be awarded for the best exhibits of corn grown in Jefferson County. F. E. Robertson, manager of the county farm bureau, addressed the meeting and referred to the boys' corn contest, and urged that the winning exhibits be shown at the October session of the Pomona Grange. O. E. Hinds and M. R. Randall, of Watertown, and E. M. Booth, of Deter, were appointed legislative committee for the ensuing year.

"For the land's sake use Bowker's Fertilizers; they enrich the earth and those who till it." Advertisement

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ESTABLISHED 1880 PUBLISHED WEEKLY

Established 1880. Published Every Saturday.
Entered as second-class matter at the postoffice at Philadelphia, Penna.

The Lawrence Publishing Co., Proprietors
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Philadelphia, Pa., June 21, 1913

Honesty in Business

The Associated Advertising Clubs of America, in annual session at Baltimore, took an advanced step in inaugurating the Golden Rule in business by adopting a code of ethics calling for strict "truth in advertising." This association has over 10,000 members, representing advertising agencies, general advertisers, and all classes of advertising mediums. From the beginning of the recent convention, lasting a week, the big issue was the adoption of some plan which would eliminate abuses in advertising and establish "full-weight delivery in every commercial transaction involved in advertising." This step is an overwhelming indorsement of the old axiom that "truth is the best policy." This axiom has had many tests, and no class of people recognizes its infallible truth better than the business men engaged in every-day contact with each other and the general public. Every experienced business man will tell you that simple honesty is the most valued characteristic in an employe as well as a contemporary. Errors in judgment are to be expected, and can be met, but unfaithfulness in duty and dishonesty and trickery in practice will threaten the success of the best organized and best managed business enterprises. And what applies in the conduct of individuals, applies as well in the general policy of a company and its dealings with the business world. The advertising men recognize this, as all the business world is beginning to recognize it, and the present step is an important move in the evolution of business practice. Advertising is rapidly taking the place of the traveling salesman. Where it does not supplant the personal representatives of a concern, it supplements their work. In every case it is the direct appeal of the producer to consumer. Where there is need of strict honesty in the personal representative, there is still greater need of it in the advertising matter. The Advertising Clubs are going about to secure their results in a most convincing manner. They propose to establish a permanent authenticated commission to investigate claims of advertisements, pass on "copy" and verify circulation claims of advertising mediums. The plan should meet with the hearty co-operation of every advertiser as well as every publication interested.

Commission Bill Defeated

The Williams Bill, requiring bonding of all persons engaged in selling agricultural products on commission, was defeated in the Pennsylvania house by a vote of 65 to 77. The bill was brought up at a time when the house was in a political turmoil, and the opponents among city members had little difficulty in securing the result desired by the commission people who do not want to be regulated. Careful observers declare that the bill was as little understood as any bill that has been before the legislature this session. Discussion was brief and very general, scarcely touching upon the details of present market abuses and the specific needs of regulation. The bill was introduced by Mr. Williams, of Tioga County, and ably supported by Mr. Peachey, of Mifflin County. They showed that the purpose of the bill was consistent with the policy of the state in demanding bonding and state regulation of banking institutions, insurance companies, public service corporations, executors and administrators of estates, and all persons and corporations which have temporary possession of the property of others. The commission men have temporary possession of agricultural products consigned to them, with even less opportunity of keeping check on their handling and honest accounting for these products, and should be subject to the same regulations which are imposed upon others doing a similar business. The speakers in opposition offered no valid arguments against the bill, but reflected the general lack of information on the needs of such a bill by declarations that the bill would "work a hardship to the shippers," that it inferred that all "commission men are robbers," but said nothing about the farmers who put the "small apples in the bottom of the barrel," or who ship only "in hot weather when things will roast, or in cold weather when they will freeze." Perhaps the best indication of the attitude of the house in its consideration of this bill is given us in the apology of Mr. Stein, of Allegheny County, in speaking in opposition to the measure. He apologized to the house "for disturbing their quiet and slumber." The commission man is a very necessary link in our present system, or lack of system, in marketing. The nature of his duties and his important relations with both producers and consumers imposes the duty on the state to regulate his business and remove opportunity for unscrupulous dealings. But the state has again refused to meet this duty. The farmers' only remedy is to deal only with commission men of established reputations, and those who are known to be responsible and honest.

Stubborn Prices

Farmers have suffered much in the past few years from the general agitation of the so-called high cost of living. It was first laid to high farm prices, and that assumption seems to stick regardless of demonstrated facts. Every systematic investigation has revealed the fact that farmers have not profited unduly thru high prices. Government statistics show definitely that farm prices have declined steadily for the past year on practically every class of commodities except meats. Yet retail prices show little or no change. A study of the relative changes in farm and retail prices in the past two years should be conclusive evidence that farm conditions have a very remote bearing on the cost of living at the present time, and should point to some other factor as the cause of the troublesome condition. Market problems and needless expense in getting food products from the producer to the consumer are apparently not yet recognized as controling factors. On the government's own figures, the farmer now receives less than 40 cents of the consumer's dollar, farm prices average 28 percent lower than at this time last year, and prices to producers are going down while the consumer continues to pay high prices. Yet the pending tariff bill seeks to solve the problem by removing the slight benefit which the farmers may have enjoyed under present tariff rates. There appears to be a serious lack of co-ordination of conviction in government departments when one declares emphatically that farm prices of agricultural products do not affect retail prices, and another proposes to reduce prices by lowering tariff rates on such products. The proposed changes may have small effect upon general farm prosperity, but if its framers desire to reach the real cause of high prices they should give attention to marketing as well as to protected production. It is interesting to observe that dressed meat prices advanced immediately following a government report showing a shortage in supply of meat-producing animals. With every such advance in wholesale quotations there is a corresponding advance in retail prices, but a reduction is a long time in reaching the consumers. Reduction in tariff rates may cause a slight decline in farm prices of commodities, but such reduction will be eliminated long before it can reach the consumer.

Breeding Seed Grain

Farmers are generally agreed upon the advantages of purebred live stock over scrub stock. The comparison has been a matter of study for many years, and recorded data are conclusive evidence which theory and prejudice can not combat. We have but recently begun to investigate the application of the same principles to grains, vegetables and other seeded crops. Purebred cattle are but the result of years of careful selection for the production of desired characteristics. The modern purebred is an animal in which the power to produce and the tendency to follow a fixed line of performance has been established by persistent selection and wise crossing. If such characters can be fixed by such methods in live animals which are subject to influence from so many sources, it stands to reason that seeds of grain and vegetables, more easily controlled, will respond in equal measure to judicious breeding methods. Some of our experiment stations are now demonstrating the possibilities in this line of work. The Sparks Agricultural High School in Maryland, in co-operation with the state experiment station, has started an exceedingly practical and promising test with seed wheat along this line. The experiment is first a test of varieties, to determine what varieties, as now constituted, are best adapted and most valuable to the farmers of the state. The tests at the high school plots are to be supplemented by similar tests on farms in the various sections of the state, and the results at the end of a series of years should prove of great practical value to the farmers. The Wisconsin station has gone a step farther, and after establishing the value of present varieties, has conducted breeding tests in which high-producing seeds of a variety are selected for certain characteristics and crossed to produce desired results. Co-operative work with farmers is carried on with these tests. When a strain of grain has been improved and bred pure for a sufficient number of years to establish its claim to pure breeding, bushel quantities of seed are sent out to farmers, who agree to use the seed in their farm sowing and report on results. Barley seed thus developed was sent out to farmers, and of 1,020 reports made, there was an average gain of 4.9 bushels per acre in the yield of the purebred seed over the local strains. The Wisconsin farmers thus co-operating with their state station are now selling improved or purebred seed to neighbors, thus making a nice profit in addition to that gained by increased yields. This is practical work which should commend itself to all progressive farmers and to all stations that have facilities for conducting plant breeding. It is one of the many ways in which farmers can profit immediately and directly thru the work of their state stations.

The Yearbook

The Yearbook of the U. S. Department of Agriculture for 1912 is ready for distribution. This book is of value to every farmer as it gives a complete set of statistics on farm crops, including production, prices, yield per acre, etc., for each separate state, as well as for the country. The current volume contains 781 printed pages, comprising 259 pages of the annual report of the Secretary of Agriculture, 282 pages of 24 special articles, 208 pages for a statistical appendix and the remainder for the index. The volume is illustrated with 60 half-tone plates, 10 lithograph plates and 19 line cuts. Among the more important special articles are "Promising New Fruits," "The Handling of Dressed Poultry a Thousand Miles from the Market," "Crop Safety on Mountain Slopes," "Insects Injurious to the Onion Crop," "A Successful Method of Marketing Vegetable Products," "Some Useful Weather Proverbs," "Insect Enemies of Live Stock," "Truck soils of the Atlantic Coast Region," "Agriculture in High Schools," and "Possible Sources of Potash in the United States." The book may be obtained upon request to your State Senator or Representative.

Agricultural Prices

The U. S. Department of Agriculture reports an increase of 4.3 percent in average prices of staple farm crops in the period from May 1 to June 1. This compares with an increase of 1.2 percent in the same period a year ago, and an average increase of 3.4 percent during May of the past five years. Yet such prices averaged 28 percent lower than on the like date a year ago, 5.1 percent lower than in 1911 and 17.3 percent lower than in 1909. Compared with May 1, 1913, declines on June 1 were shown on butter, hogs, beef cattle, veals, sheep, milk cows, horses, clover seed, alfalfa seed, wool and broom corn. All grains, cotton, chickens, eggs, hay, lambs, apples, vegetables and timothy seed showed an advance. Compared with a year ago, of 33 commodities reported on, only 11, including cotton, butter, chickens, eggs, hogs, beef cattle, veal calves, sheep, lambs, milk cows and horses, are as high or higher than they were on the same date in 1912. Outside of the meat classes and products, practically all farm commodities have shown a marked decline in the past year.

PENNSYLVANIA LEGISLATIVE NEWS

Much Legislation Yet to Pass.—Altho the senate has not yet concurred in the house resolution to adjourn June 26, opinion appears to be that it will do so. The workmen's compensation, woman and child labor, public service commission, election reform, constitutional convention, taxation and various other remedial bills remain in the houses or are tied up in committees which have shown little disposition to agree. More legislation relating to government of municipalities and more purely legal or technical bills relating to court procedure has been passed at this session than ever before, and much of the stuff upon the ways is of the same character. Owing to political machinations and the adroitness of people vitally concerned in big bills, the history of former sessions has repeated itself and the big matters are left to the close of the session, an unfortunate condition. The appropriation system has come in for many hard knocks, both on the score of lavishness and because while liberally voting money to charities the state is passing legislation to borrow money to build roads.

Immense Appropriations.—A conservative estimate of the money that will be available for appropriation in the two years commencing June 30 is about $65,000,000. The appropriation bill for conduct of the state government, including the highway department items for road construction and maintenance, and the $16,000,000 appropriation for the schools, carries under $42,000,000 and the charities run about $22,000,000, so that without counting in numerous other bills, there will be appropriations far in excess of revenues, even if the taxation bills go thru and add $5,000,000 more to the ready money. It is estimated that, counting in all appropriations favored by the two branches, the total will reach about $80,000,000, altho at this time there is no way of making an accurate statement. The governor will have to make tremendous cuts to make the bills fit, or else call a special session to provide the revenue.

Special Session Talk.—Much is heard about a special session. This is within the power of the governor, but it entails grave responsibility and is a power which governors have only exercised five times in a hundred years. If the legislature should adjourn without enacting the workmen's compensation, the public service and election laws, there might be some justification for an extra session, in which event legislation could be passed to enable the issuance of bonds for road construction, provided the session occurred after the approval of the constitutional amendment at the November election. However, an extra session would cost over a quarter of a million dollars, and the popular demand for action would have to be greater than it is now to justify it.

Road Legislation.—The governor has signed the E. E. Jones bill to provide $1,000,000 to pay second class townships the 50 percent bonus on cash road taxes collected up to December, 1913, and a bill is now pending for $2,500,000 more to take care of the ensuing two years. Just where the money is to come from no one pretends to say. The bill to enable the constitutional amendment for borrowing $50,000,000 for road construction is thru, and bills regulating distribution of state highways funds are now pending in the upper house. Numerous amendments to the main highway act in the shape of new roads and changes are embodied in bills in the senate, the house having passed them, and some slight changes regarding connecting up of routes and building of spurs have been enacted. A bill just signed gives the state the right to take the rights of way of abandoned or unconstructed railroads, railways and canals for highways should it ever care to exercise itself of that privilege, which would take a ton or two of money. Bills are also pending to give a measure of state control of township dirt roads and for allowances to such districts. Other bills would permit lighting of rural roads and provide for state aid in maintenance.

For Agricultural Statistics.—The general plan for the organization of the new department of labor and industry, which is now being worked out by Prof. John Price Jackson, formerly of State College, calls for provision for statistics of all industries, and attention will be paid to the number of persons operating farms and to the number of people employed, so that complete information along this line may be secured. Such work has been attempted by the department of agriculture, but it has been hampered by lack of an appropriation and the necessary acts. The provision for such a bureau having been cut out, the work will be taken up by the new department.

Control of Dams.—Under the provisions of the senate act now pending in the house the state will have absolute control of all dams in the streams of the state except in the tidal waters of the Delaware and its navigable tributaries. The bill requires any person, firm or corporation desiring to erect a dam or wing wall or other obstruction in a stream to apply to the water supply commission for permission and file plans. Primarily the bill was designed to give the state complete control of all water resources and at the same time to assure its authority over all dams which might in time become menaces like those at Johnstown and Austin. Ultimately the water power of the state will be immensely valuable, and the state will now be in a position to hold it for leasing, while at the same time no dam can be built unless engineers pass upon its strength.

Auxiliary Reserves Ready.—State forestry officials have already heard of a number of tracts of land which are to be placed under state authority for supervision as auxiliary forest reserves. They will be the first under the new laws, and the state will see that no timber is cut until matured, when the local district will get the benefit of 10 percent of the value. These tracts lie upon the Susquehanna watershed, and it is expected that large numbers of additional properties will be put in and the wooded area increased.

State Control of Lakes.—A bill pending is attracting attention because of its possibilities in relation to water supply and ice. It provides that the state may acquire title to lakes or ponds of certain areas and maintain them as state property. This act would permit the state to assure water supplies for institutions and at the same time to lay back ice resources.

Fish Baskets Illegal.—The State Commissioner of Fisheries has announced that the use of fish baskets is now illegal under the terms of the act just approved, and this will have the effect of causing abandonment of many dams. The baskets were objected to by many people as causing many game fish to be illegally taken, altho for the catching of eels they were well adapted.

May Light Highways.—A bill which will enable township authorities to light highways has been passed. It provides that where there are villages lights may be installed and the cost paid by those benefited. Other legislation pending will give rights to commissioners of first class townships to establish regular lighting systems.

The Flood Service.—The state flood warning service, for which an appropriation of $10,000 has been made, will be organized by the state water supply commission this summer. It is proposed to establish more than 100 stations in situations which will enable immediate warnings of heavy rainfall or rises in streams to be known in districts likely to be affected.

Appropriations Cut.—The appropriations committee of the house, which has just reported out the general appropriation bill, did some tall cutting in many departments. The items reduced or eliminated in departments relating to agriculture are rather sweeping. No provision has been made for the increased salaries of officers of the department of agriculture. The provision of $55,000 for farmers' institutes and for expert farm counsellors stands, but the item of $40,000 for a bureau of statistics is eliminated; item for control of fruit tree pests cut from $160,000 to $100,000; $8,000 added for seed inspection under the new law; special examination fund cut from $10,000 to $6,000; feeding stuff inspection cut from $35,000 to $30,000; linseed oil inspection cut from $10,000 to $5,000; $60,000 for bureau of poultry cut out; $8,500 item for payment of deficit in Keystone State fair at Pittsburgh stricken off; while items for appropriations for various organizations in aid of agriculture stand at $2,000 each, the State Horticultural, Dairy Union, Live Stock Breeders', Poultry and Beekeeper's associations being recognized. An allowance of $2,000 for inspection of bees and $57,000 for inspection of fertilizers are given. The dairy and food division is given $25,000 for cold storage inspection and the usual provision given in other items. The Live Stock Sanitary Board general appropriation for enforcement of cattle disease act was cut from $400,000 to $285,000, and the item for payment of deficiency to indemnify cattle owners for tuberculosis losses was advanced from $21,000 to $25,000. The stallion encouragement work item was cut from $10,000 to $6,000. General cuts were made in the forestry department, which asked for over a million dollars, the items for furnishing advice to owners of woodlots, small timber tracts, farm timber and shade trees escaping. The item of $5,000 for ginseng was cut out. The item for new lands for reserves was cut from $200,000 to $50,000, and that for improvement and development of forest reserves from $200,000 to $65,000. This department was hit harder than any other. The fisheries department gets $96,000 for general fish work and $65,000 for permanent improvements. In the game department the game protectors are cut from 27 to 17 and salaries cut from $75 to $65 per month, while the general allowance is cut from $50,000 to $25,000. The details of the highway department appropriation are as follows, all figures being for two years: Commissioner, $16,000; 2 deputies, each, $12,000; chief engineer, $14,000; auditor $6,000; bridge engineer, $7,200; 50 superintendents of roads, $150,000; 15 assistant engineers, $72,000; chief draftsman, $4,800; 4 clerks, $9,600; 4 assistant draftsmen, $14,400; chief clerk, $4,800; 4 stenographers or clerks, $9,600; 2 bookkeepers, $4,600; traveling expenses of department, $125,000; contingent expenses, $75,000; automobile division, $140,000; experimental work, $60,000; reconstruction of roads destroyed by storm or cloudburst, an emergency appropriation, $100,000; state aid highways, $1,000,000; main highway construction, maintenance of main highways and state aid highways, $4,000,000; maintenance of unimproved roads, $2,000,000; and acquisition of turnpikes, $200,000. There is also carried $830,000 to pay the cost of uniform primaries last year and in the two years to come; $100,000 for aid of county and other fairs. The allowance to the Chestnut Tree Blight Commission is cut from $275,000 to $100,000.—Hamilton, Harrisburg, Pa., June 16, 1913.

NEW JERSEY FARM NEWS

Crops.—Up to June 1, all crops in New Jersey suffered because of the weather. The report just issued by the secretary of the state board of agriculture shows that the spring was most disappointing to farmers. All crops were injured except grass, grain and apples. Early potatoes were seriously damaged and in some sections destroyed. In certain localities all of the peaches were killed and to some extent they were injured all over the state.

Cattle Tests.—In the month ending June 1, 767 imported cattle were tested by state inspectors. Of this number 333 were tested after entering the state. Twenty imported reacting cattle were slaughtered. Native cattle, having a value appraised at $1,793, were slaughtered during the same period. There was received from the sale of meat and hides of such cattle $542, while $300 was paid in fees by shippers for the testing of imported cattle.

Dairy Inspections.—During the month of May, 499 inspections were made by the state board of health. There were 253 dairies inspected, of which 125 scored above 60 per cent, 120 below it, and 8 dairies were obliged to relinquish the sale of milk. Some of the others were given notice that they must establish new and better methods of handling their milk. A few re-inspections have been made and improvements have been noted. The board also made a thoro inspection of the streams of the state.

Grocers for Pure Foods.—The National Wholesale Grocers' Association, which recently met in convention at Atlantic City, committed itself positively to pure food, honest weights and full measurements. There were 300 delegates, representing every state in the Union and many billions of dollars. A feature was an address by Dr. Alsberg, who succeeded Dr. Wiley.

State Road Matters.—Col. Edwin A. Stevens, state road commissioner, estimates that a proper administration of his department will call for the actual expenditure or the creation of liabilities which would absorb the larger part of the $2,245,000 available from various sources up to October 31, 1914. This amount includes state appropriations of $915,000, motor vehicle funds of about $1,550,000, and appropriations for convict labor of about $175,000. The proper distribution of this money among the counties is difficult, and has been made more so this year by the taking over by the state of the so-called blue routes totalling about 500 miles of highways in the state. These "blue routes" are the roads connecting the 21 county seats.

Experiment Station Managers Elect.—The board of managers of the state agricultural experiment station, at New Brunswick, has chosen the following officers for the ensuing year: President, James Neilson, New Brunswick; vice-president, George E. De Camp, Roseland; secretary, Irving S. Upson, New Brunswick. After the meeting, dinner was served, at which grape fruit grown in the experiment station greenhouses were enjoyed as the first course. The buildings and equipment were inspected on the 400-acre station farm. An interesting sight is a 10-acre orchard of dwarf apple trees.

Potato Spraying Demonstrations.—The Mercer County Farm Bureau is giving demonstrations of how to control fungus diseases of the potato, such as early and late blight and tip burn, as well as how to keep off flea beetles and kill potato bugs. A 5-5-50 solution of bordeaux mixture is being used at the rate of about 40 gallons to the acre. Two pounds of paris green are added to each 100 gallons. Experiments in New York and Vermont have proved that spraying with bordeaux mixture has paid, even tho no late blight was present.

The Soybean.—The extension department of the state experiment station is beginning several co-operative tests to determine what varieties of soybeans are best adapted to New Jersey. It will test in the coming year about 25 varieties, since the soybean appears to be a crop well suited to the same place in the common rotations as oats have heretofore taken, and its planting and cultivation are comparatively simple, being practically the same as for corn, except that rows need not be so far apart and that they do not have such exacting fertilizer requirements. They do, however, need inoculation to enable them to take nitrogen from the air by the aid of bacteria.

State Schools Take Up Gardening.—The students of the state normal and model schools at Trenton have taken up gardening this spring. In all, about 200 of them have taken a hand at it. The aim is not so much to teach to plant, but to have the pupils interested in the growing plants. As a rule, vegetables and flowers which will be matured by the close of the school term are given most consideration. Crops like corn are planted and allowed to grow thru the vacation period and harvested in the fall. Worms and other destructive pests which attack such vegetation are carefully scrutinized and studied. Weeds are also made a subject of study.

Benefit of Gardens.—Speaking of school gardens, Superintendent Marsh of the Summit schools, has this to say: "Since we established our school gardens there has been a marked improvement in the conduct of the children. Instead of the "rough-house" play they give their time and attention to the garden project. It makes the child a better citizen to show him this recognition. Then there is the nature study side to the enterprise. A spirit of friendly rivalry is manifested that not only results in larger and better crops, but makes the youthful gardener feel that he can be somebody."

Patrol System on Roads.—Those sections which have adopted the road patrol system are well pleased with it. Evidences of the good results that have come from this are plainly seen, there being few holes and ruts. Such as there are, are filled at once by the men of the patrol. By means of it damage sustained by road surfaces is not permitted to extend, but is at once repaired at a minimum of cost. The results have justified its establishment and continuance, not only saving the roads but at the same time the cost of making repairs.—D. T. H.

NEW YORK LETTER

National Co-operative Company.—Another new co-operative company, known as the National Co-operative Company has recently been evolved. It is capitalized at $50,000,000, with headquarters in New York.

Rural Conference.—The rural conference mentioned last week in these items, to be held at Syracuse University, July 8-16, will call out some valuable papers and addresses on vital country life topics. About every phase of this important subject will be touched upon by men who are qualified to speak. The rural church problem will be discussed in its various aspects. On Saturday, July 12, there will be a grange field day, with addresses by State Master Vary and Secretary Giles. Prof. F. W. Howe, Syracuse, N. Y. will be pleased to send a program to any who may desire it.

Grape Crop Prospects.—The grape growers along Lake Keuka are far from optimistic about the grape crop this year. Many place the crop not above 50 percent, while others think it will reach two thirds. At any rate, it is likely that the crop is bound to be a light one, owing in part to the fact that the vines were weakened by the frosts. There are fewer buds than usual, it is said, and much "sloughing" is anticipated. In the eastern part of the state the grape vines were badly hit by the frost, and new vineyards have suffered considerably. Other crops along the Hudson River were affected by the cold, especially on the lowlands.

Prisoners on Highway Work.—At the special session of the legislature, to convene this week, a bill will be introduced for an appropriation of $50,000 to try the experiment of employing prison labor on the highways. Nothing very radical will be attempted if the bill passes, but it is believed that it will be to the interest of the state if prisoners can be employed at certain kinds of highway work. The commissioner of highways and the superintendent of prisons favor the project.

Some Grange Notes.—The Jefferson County, N. Y., grange offers cash prizes for the best exhibits of corn grown in that county, to be shown at Canton next winter. It is also proposed to have the prize-winning exhibits in the boys' corn growing contest shown at the meeting of the Pomona Grange in October. Granges can do much to encourage the farm boys in farming by offering prizes to stimulate their interest.

National Master Oliver Wilson will be one of the speakers at the New York State Fair on Grange Day. He will visit several of the eastern states, including Pennsylvania, and speak at the field meetings. This will keep him busy until about the time of the New York State Fair. The annual field day and picnic of Cortland County grangers will be held on the Cortland fair grounds on July 30.

Highway Matters.—The governor and his attorney-general are now getting after the highway contractors who used the state's money so lavishly in so-called road building in the past two years. The evidence that has been secured during the recent investigations will be submitted to the grand juries in at least 21 counties of the state, and criminal charges will be presented by the attorney-general's new deputy, Peter B. Smith, of Brooklyn.

President Invited.—At the meeting of the state fair commission June 5, president Wilson was invited to attend the state fair on September 8, and it is expected that he will accept. It is also believed that Colonel Roosevelt, Secretary Bryan and Governor Sulzer will be present on other days of the fair.

Eight Hundred White Flags.—Commissioner of Highways John N. Carlisle celebrated Flag Day in a novel manner. He has ordered placed on the highways of the state 800 white flags, marked "S. H. D. Patrol," showing where men engaged in repairing the highways are at work. The idea is to make the patrol service more effective, and to eliminate as far as possible the necessity for complaint against patrolmen for failure to properly care for the highways. The system is adopted from European countries. There travelers who fail to see the white flags displayed at frequent intervals report the same to headquarters, thus making the patrolmen more efficient. "There are two things we wish to impress upon you," says the commissioner to the patrolmen in his letter to them on this subject. "There is no political power strong enough to hold you in your position if you neglect your duty, and, second, you are to be courteous."—New Yorker.

MARYLAND NOTES

Farmers' Clubs.—There are many farmers' organizations in Maryland, some established years ago. They have been the means of fostering better farming. The Gunpowder Agricultural Club, of Baltimore County, with a small membership, represents thousands of acres of the best farming lands in the county. A good feature of the clubs is the inspection of the farm premises wherever the meetings are held. The Farmers' Co-operative Club, Laurel district, held its last meeting at the home of Mr. Thomas M. Baldwin, Jr. Professor Taliaferro, of the Maryland Agricultural College, was the speaker of the evening. He discussed the necessity of and benefits resulting from co-operation and organization of farmers, and the work of the granges.

Farmer Gives Commencement Address.—Mr. Robert Crain, who farms 3,000 acres in Charles County, will address the graduates of Charlotte Hall Academy at commencement exercises, June 15. Last year the writer visited the farm of Mr. Crane, first week in June, and saw a field of 100 acres in alfalfa which had not a weed in sight, was waist high and almost as blue as the sky with bloom. The first cutting was an average of three tons per acre.

Sheep Suffer From Cold.—The sheep of Garrett County suffered considerably with colds this season after they were sheared, as the nights were continuously cold for at least 10 days.

Aeroplanes Annoy.—The aeroplanes from Annapolis, which go sailing over the lower counties, are scaring not only the poultry but many farm teams at work in the fields. The unusual sight and clattering noise is such as to upset the most docile farm team.

Gypsy Depredations.—A band of gypsies passing thru Harford County last week committed many petty thefts, the women actually entering farm houses while owners were at church and gathering up the silverware. Officers recovered the "swag" and made the gypsies move on. Bands of gypsies become a great nuisance in the state every June, and farmers are talking of the necessity of having better protection.

Poor Fishing Season.—The shad and herring fishing in the state this spring was the poorest for years. As many depend on the occupation, and as the wanton destruction of the fish at spawning time is endangering the source as a food supply, it is concluded that the state must soon take action in the matter. An old fisherman in the Bay Hundred district was sick on May 25, when the season for herring seining closed, and was unable to take up his pound nets. A few days ago, when he recovered, he took up his nets and succeeded in landing a wonderful catch of rock fish, some said to be 3 feet long. He sold the lot at 14 cents a pound, netting him nearly $900.

Standard Apple Barrels.—A bill has been introduced in Congress which, if it becomes a law, will affect the packing of fruit and vegetables by Marylanders who make interstate shipments. The bill provides a standard barrel for shipment of food supplies. Staves to be 28½ inches and bulge circumference to be 64 inches, diameter of barrel to be 17¼ inches.

Old Building Destroyed.—The old one and a half story building, known as Washington's Headquarters, in Frederick, has been destroyed to make room for a milk plant. In excavating two British halfpennies and a shilling, dated respectively, 1773, 1774 and 1776, were found. The building has been an object of much interest to tourists for many years.

FARMERS' DAY AT DELAWARE STATION

The Delaware Experiment Station entertained a crowd numbering close to 3,000 at Farmers' Day, June 16. Other stations may gather a larger total number at such events, but certainly none draw a larger proportion of the total numbers of farmers of the state. The experimental plots were in excellent condition for comparative study, and the crowd showed keen interest in the work being done by the various departments. The forenoon was spent in an inspection of the farm and buildings. A demonstration in tractor plowing was an interesting feature, two tractors, drawing six-bottom gang plows, doing very creditable work, considering the dryness of the soil.

Free lunch was served from a tent presided over by the college cadets. Following the lunch the crowd was gathered under the trees about Director Hayward's residence and listened to addresses by Governor Miller, of Delaware; Governor Goldsborough, of Maryland, and Prof. Alva Agee, of the New Jersey College of Agriculture. The crowd showed its appreciation of the high honor of having the chief executives of the two states with it, but it showed its true farm character and the direction of its interest by its keen appreciation of the address given by Prof. Agee. His subject was the maintenance of soil fertility, and he discussed the four essential principles, which he declared were enough for any practical farmer to understand and practice to insure success in maintaining the fertility of his soil. These essentials were: (1) Tile drainage, (2) lime to sweeten the soil and make it friendly to crop growth, (3) organic matter to give life to soils, and (4) intelligent fertilization, either with commercial fertilizers or barnyard manures, or both.

An interesting event of the day was the breaking of ground for the new affiliated college for women, with an address by Dr. Hannah McK. Lyons, of Lincoln University. The Station authorities are to be congratulated on the success of the day and the statewide interest in the affairs of the Station which will bring out such a crowd. We believe, however, that the visitors would have enjoyed more talks by the station men in explanation of the work on exhibit.

The Daughter of David Kerr

By HARRY KING TOOTLE.

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PRECEDING CHAPTERS

The city of Belmont is a typical middle-western village, under the rule of the political "boss," David Kerr. The daughter, Gloria, had spent her girlhood away from home and knew nothing of her father's profession or business affairs. Supposing him to be a wealthy real estate merchant and a leader in Belmont society, she came home to take her place in the best circles of the town. To gratify her wish and continue the deception, David Kerr secretly secured the services of Judge Gilbert to introduce and assist Gloria in establishing herself in society. In return Kerr promised to give the full weight of his political influence to secure the passage of a questionable street railway franchise, the money coming from such influence going to Gilbert. Joe Wright, recent purchaser and editor of the Belmont News, met Gloria while traveling abroad. He had fallen in love with her before he was aware that she is the daughter of David Kerr. Since coming to Belmont he found that it was necessary to oppose the "boss" thru the News, and he took up the fight on the street railway franchise, the very measure which was purchasing the services of Judge Gilbert in Gloria's behalf. The opposition of the News threatened the success of the franchise project and the defeat of the ring in the approaching election. To save the "machine" and his political friends, Kerr decided to purchase the News. Just previous to the interview Gloria promised to become Wright's wife. Knowing that Gloria was still ignorant of her father's real character, Wright refused to sell out, and warned Mr. Kerr that he would push the fight to the limit. Seeing a copy of the News containing a denunciation of her father, Gloria drew the hasty conclusion that Wright was an impostor and slanderer, and she broke her engagement with him. She then plunged into settlement work, and her first acquaintance in the slums was Little Ella.

CHAPTER XIX (Concluded)

Gloria sprang back at sight of the body lying before her.

"It's a man. He's hurt," she called back to the sick woman as she knelt to examine him.

He had fallen so that she could not get a good look at him in the dark hallway, and she rolled him toward the door to get him on his back and see his face. As she gazed upon his countenance the fingers of death itself seemed to seize her by the throat. Her heart gave one great leap and then stood still. On the floor before her lay the body of the man she loved.

"Joe!" she screamed. "What are you doing here?" Joe, Joe, speak to me!"

But there was no answer. His eyes were closed, and the pallor of death seemed to be upon his face.

With strength beyond what she had ever known herself to possess, Gloria seized the motionless form and dragged and rolled the man into Little Ella's room. Before she turned to him again she closed and bolted the door. Then she bent over him and begged him to speak to her, to open his eyes and know that she was with him.

"Joe, don't you know me?" she pleaded. Then to Little Ella, "He's dead, he's dead. See, he doesn't move."

"Yes, he does," answered the other woman. She had been sitting up in bed, an excited spectator of all that had transpired. "He's breathin'. Tear open his shirt and feel his heart beat."

Wright was a pitiable object as he lay on the floor like one dead. His coat and waistcoat were gone, and his collar and cravat had been torn away. On his white shirt were bloody stains. Gloria felt for his heart and was rewarded by its feeble beat. She next dashed water from the pitcher over his face, but without avail. He showed no signs of returning consciousness. From a wound just above his temple on the right side of his head the blood began to trickle down over his face, making its pallor all the more ghastly. She had no means of knowing how serious this was, and naturally came to the conclusion that it was a death-wound. There was only one thing to do: get a physician.

As she started to her feet she heard two men running down the stairs and making a search from room to room on her floor. These must be the men who had attacked him. She could not let him fall into their hands, and therefore she could not leave him to go for aid. The impotence of her position made her feel like screaming to relieve the nervous strain.

"What do you know about this? How did he come here? What has happened to him?"

"I dunno," answered the woman. "There's somethin' doin' all the time in this dump."

A sudden knock at the bolted door chilled Gloria with terror.

"What's that?" she whispered.

"Somebody's at the door," replied Little Ella, in the same low tone. This fact was obvious.

"They can't come in," Gloria continued.

Again came the knocking, louder and more insistent.

"I can't let anything happen to him," murmured the unhappy girl in agony, remembering how the day before she had demanded that he be punished. "Joe, Joe, what does it all mean?"

But Wright made no answer. He lay like a log as the girl he had loved bent over him, wiped the blood from his face and brushed back his disheveled hair.

With the next knock came the voice of a man demanding entrance.

"Ella, Ella, open this door."

Gloria rushed over to the bed.

"Tell him you can't get out of bed," she implored in a whisper. "Tell him there's nobody here."

"I can't git out o' bed. There's nobody here," Little Ella called.

This answer did not pacify the man.

"That's a lie," he shouted. "There's somebody in there or the door wouldn't be locked. Open this door, do you hear me, or I'll bust it down."

The tone of his voice made Gloria feel that he would make good his threat. There in the center of the room in full view lay the man whom they were seeking. Once they burst the single barrier they would be upon him, to do what further harm she knew not. It might be that he was now already beyond all human aid. He still breathed, however, and Gloria was willing to fight if there was even only one chance in his favor. Hence it would not do for them to find him the minute they broke down the door. She must hide him somewhere to give her time to parley with his assailants. She looked vainly about for some place to put him.

"For God's pity, help me hide him," she beseeched. "I can't give him up. Where does that door lead to?" She pointed to the door close by the one which led into the hall.

"That's only a closet under the stairway," was Little Ella's whispered explanation. "They'd find him there in a minute."

"You wouldn't let them kill him, would you?"

"I can't help you. I'm so weak I can hardly turn over in bed."

"Open this door, I say," came from the man without as he pounded on the door ominously, "or I'll crack you over the head."

Gloria understood that there was no time to temporize. She must do something and that quickly. Close by where she stood next the bed, and on the side away from the door, was Little Ella's trunk. Behind it on hooks hung a number of garments, and on a chair were more clothes. It was the only chance, and Gloria took it.

How she ever managed to get him, a dead weight, across the intervening space and safely stowed behind the trunk she never knew. She dragged, she hauled, she pulled, she rolled, and the forlorn hope that she would save him yet gave her strength. As she snatched skirts from the hooks and all the clothing from the chair to pile upon him, the pounding upon the door became more and more vindictive. The girl was out of breath, but as she bent over the prostrate form of the man she loved, she managed to gasp:

"Joe, listen, listen to me. If you can hear me, dear, listen. Don't you stir, don't you make a sound until I come to you. Can you hear me, Joe?" But he was deaf to all entreaties. Seeing this was so, she turned to Little Ella. "Get him to go away. Offer him anything, promise him anything. I'll do it; only keep that man on the other side of that door."

"There's at least two of 'em."

"That doesn't matter—a thousand—it's all the same. Get them to go away."

This was easier said than done, but Little Ella was willing to make the effort.

"You git away from that door, an' leave me alone."

"Open this door," threatened the besieger, "or I'll——"

And then interrupted another voice with a suggestion that made Gloria grow faint.

"Aw! Let's bust it in. He's in there all right."

"Let 'er go," answered the first one.

Then came the heavy thuds as the men threw themselves against the door. The knocking at the gate in "Macbeth" had no more portentious sound in the play than had this attack upon her stronghold to Gloria. She felt all the nervousness of troops under fire that must remain inactive awaiting orders. There was nothing she could do but wait until the door was battered down.

This was not long in happening. As she stood in front of the trunk nervously twisting her handkerchief in her hands, at one last mighty effort the bolt yielded, the door flew open and two men stumbled into the room. Little Ella recognized them both instantly. They were Buck Kelly and Turkey Ryan, notorious denizens of the underworld. If ever there were two vicious-looking cutthroats, these men answered their descriptions. To make their ruffianly appearance worse they bore the marks of their recent encounter. Kelly's left eye had swelled almost closed, and Ryan had a long cut across his cheek where Wright's ring had left its mark with a slashing blow. He had done even more damage than this, but these showed the plainest. Needless to say, their tempers had not been sweetened by the episode.

"Now, damn you—" Ryan began savagely.

"Stop!" Gloria commanded. "What are you doing here?"

Until she spoke they had not seen her, and both men were taken much aback. To find a lady there was something they had not expected.

"What the—" Ryan gasped, but checked himself and then continued in a slightly more respectful tone. "I begs yer pardon, miss, but what are you doin' here?"

"That's none of your business. You clear out, both of you."

This encouraged Little Ella to take her part in the discussion, which she did with her most strident tones.

"What do youse mean, buttin' into here? Beat it, you two. I'm a lady, an' when I has a lady frien' avisitin' me they ain't no place for bums. On yer way."

It was not this tirade which had the most effect upon them. Both quailed before Gloria, who stood eyeing them sternly. Then they looked at each other, and without a word of apology shambled out into the hall.

CHAPTER XX

If Gloria believed that she had put to flight for all time such gentlemanly assassins as Mr. Kelly and Mr. Ryan, her feeling of triumph did not last long. As the door in the hall was still open she did not dare make a move in Wright's direction. She determined to close the door and pull the washstand in front of it, wedging it under the knob, before trying further to succor the injured man. When she walked toward the door, it again framed the forms of Ryan and Kelly. As a result of a short conference just out of earshot, they had decided to return and get their man.

"What do you want?" her heart sank.

"We're lookin' fer a man," Kelly snarled.

"An' he come into this room, too," Ryan added doggedly. "We don't want to make you uncomf'table lady, but we gotta git that man."

The way he said it made Gloria feel that he meant business. All she could do was play for time and pray for Mrs. Hayes to return.

"There's no man here," she explained in her most winning manner. "You can see that plainly for yourself. I came over from the mission to take care of this sick woman. You are only making her worse by bursting into her room in such a rude fashion. Please go out gently; she must have it perfectly quiet."

Turkey Ryan so far forgot himself in the presence of his betters as to grin at this explanation.

"We don't want to have to make you give 'im up."

This threat had an unpleasant sound. Hitherto the girl had not feared for her own safety, but his surley remark frightened her. The one thing that kept her steadfast was the thought that she was protecting the man she had loved; the man she now loved more than she ever had. She did not know how he happened to be there; she did not know how he regarded her; she only knew that she loved him, that she would give her life a sacrifice to save him.

Ryan next appealed to Little Ella.

"Ella, that guy come in here. Where is he? We ain't goin' to be scared by any fool girl. She don't know who wants him. Now give 'im up."

"Don't say a word," Gloria told her.

"You gotta stick by us, Ella. This ain't no ordinary job."

At Ryan's injunction to stick by him, Little Ella seemed to waver.

"Don't you fergit who yer friends are. Who keeps you from bein' jugged? Mike Noonan. Who lets you stay here when you can't pay, an' feeds you? Mike Noonan."

"That's so. He has been good to me."

Gloria was quick to catch the note of indecision. "But now I'm going to take care of you."

"Yes, goin' to, goin' to," sneered Kelly. "You know what church promises is. Don' you fergit we gotta stay together down here, all of us."

It was the old, old appeal of class to serve a selfish end.

"Yes, that's true. I don' want to say anything, but——"

Ryan immediately pressed the advantage he thought he had gained.

"This is yer chanct, Ella. You know what she'd say to you if you was in her house. Are you with us? I'll see you git yours."

It was a moment when a man's life was at stake. Gloria believed that if the woman told and they tore Wright from her she might never see him alive again. She had prayed silently for help to come, but she was still alone. Already she was giving up hope from that quarter and was conscious that upon her own efforts in all probability the very life of the man she loved would depend. To add to her anguish was the fear that he might regain consciousness and betray himself by a moan.

Now it all depended upon Little Ella. It had been a clever stroke, that of Ryan's, asking her how she would be treated in this woman's home. Against this appeal to class prejudice Gloria had not scored.

"I'll tell," said the woman.

The two men looked at each other and smiled.

"Stop!" cried Gloria, looking not at the men, but at the girl who lay pale and trembling upon the bed. "Do you remember what you said a while ago? What you accused me of? You swore I hadn't loved. Even to my sorrow you shall have proof of it now that I do. The very man whom I'm defending from these bullies is the one man on earth I love." Ryan and Kelly looked at each other in amazement. "You shall see if you loved more than I. You've gone thru fire and storm for a man? I'll do no less. If need be, I'll die for this man—here and now—because I love him." The fire died out of her eyes. She stretched out her hands to Ella pathetically and begged humbly, "My whole heart's happiness is here. Are you going to help them try to take him from me?"

The woman, a creature of impulse, was moved.

"You'd better give it up, Turkey. I ain't goin' to let you touch that man."

"Ah, you're a woman," sighed Gloria. "You know a woman's heart."

"Nix on that love spiel, Ella," commanded Ryan. "This ain't no valentine party, lady. You can't fool us with that soft-soap talk. We gotta carry out the boss's orders. Buck, look in that closet."

Ryan recognized that the time for action had come. On his side he had the overwhelming brute force which would enable him to do as he pleased. Kelly had turned to look into the closet when he was stopped by Gloria's outburst. What Ryan had said had reminded her of her own power.

"Stand where you are, you infamous things! Must I tell you the truth to be obeyed? If you are above the law, I am higher still. Mike Noonan could have told you who I am. You speak of your boss, then learn the truth."

"What yer givin' us?" jeered Ryan as he advanced toward the place where Wright lay hidden.

"Stand back," she cried. "I am Gloria Kerr."

The two men looked at each other in astonishment, and Little Ella sat bolt upright in bed.

"The boss's——"

"Daughter," Gloria finished Ryan's exclamation. "I am the daughter of David Kerr. Now go."

Something in her bearing made them feel that she was telling the truth. Kelly, timid now and apologetic, was the first to speak.

"Well, we didn't know you was—why didn't you say——"

"I guess we'll go see Noonan," was Ryan's method of beating a retreat.

"He can't git away, anyway," Kelly whispered to him.

Gloria breathed a sigh of relief as they turned to go, but in an instant the shrill scream from Ella which brought the men back to the center of the room froze her blood.

"The boss's daughter!" It was a witch's screech ending in a peal of unearthly laughter.

Gloria sank into a chair gasping, "What have I said?"

She felt the curse upon her.

"Come back, Turkey, come back," shrilled Little Ella, laughing wildly. "The boss's daughter! The boss's daughter!"

Her thin hands plucked at the coverlid, and her blazing eyes were fixed upon Gloria, who had shrunk into a weak lump in her chair. Only a few moments had passed since all had admitted that Little Ella dominated the situation. That fact she recognized as readily as did the others. Now she determined to make use of her power. Gloria herself had aroused the savagery of the woman by having inflamed her against the boss, not knowing that the creature's rage was directed against her own father.

Feverishly stimulated to an unaccustomed mental acuteness by the thoughts of her wrongs as Gloria had laid them bare, all the cruelty of the woman's nature asserted itself. Revenge with her was sweetness long drawn out. It was the dainty morsel over which the gourmet lingers. It was the tantalizing antics of the cat that gloats over the mouse beneath its paw, and even lets it run a little way to arouse the wild hope that it may yet escape. Having decided upon the ultimate disclosure of Wright's hiding place, Little Ella was now bent most of all on making the daughter of the boss suffer to the limit.

"What's the matter, Ella?" Ryan asked.

"Let them go, I say. Please let them go," Gloria implored.

"You want them to go, do you? Ha! Ha! The boss's daughter! The boss's daughter!"

The last words she uttered in piercing tones horrible to hear as she swayed back and forth, keeping time with her body to the cadence of her cry.

Gloria tried to gather herself together to meet this new attack, but without much success. She felt so weak from the shock that she was only able to rise from her chair with difficulty.

"You're out of your head. You're mad. Keep still, I tell you." The men still standing irresolute, she turned upon them. "Why are you standing there? Leave this room."

Little Ella was enjoying herself hugely. Gloria's every pleading tone was music in her ears. Her eyes burned with excitement. Yet the cruel cat delayed to crush the mouse. Its quivering was too soul-satisfying. Realizing that if she admitted Gloria was the daughter of David Kerr the men would forego their pursuit of Wright, Little Ella knew her best course was to deny the relationship.

"Don't you go, Turkey," she yelled. "I'll tell you the truth," She turned to Gloria. "I wisht the boss had a daughter, did I?—It's a lie, Turkey. She's not Dave Kerr's girl. He'd laugh to see a daughter o' his in such a hell-hole. I'd watch her to see that she paid the price," she glanced at Gloria malevolently, "if—if he had a daughter. An' yer pertectin' the man you love!" she mocked. "We'll see how the boss's daughter loves."

Her laugh was terrible. The men could not think her the same woman they knew. Gloria started in alarm. She felt the woman was mad, and did not know what she might do.

"What are you going to do?" she asked.

Now Ella was sneering at her. She knew how to choose knife-blades for words. In everything she said was the cunning and the cruelty of a lost woman. Gloria was suffering, she could see, but there was still another chord which would vibrate to misery. Since time began jealousy has been a flaming sword in the hands of an unscrupulous antagonist who knows how to use it. To make Gloria think that she was defending a man untrue to her, was something. To make her believe that she had been defeated by the greater charm of Little Ella herself, was far more.

"Do you think I'd 'a' let you hid that man if he'd loved you? Never! You don' know why he comes here, but I do. He comes here to see me. He loves me."

She beat her breasts as she spoke to emphasize her words and her eyes sparkled with the challenge she had just hurled at the daughter of the boss. Gradually, bit by bit, the veneer of civilization had been chipped away. Gloria no longer saw the gulf that separated them. She knew only that by cozening words this other woman was trying to make her think she had been robbed of her own. Her weakness had left her. Now when she summoned all her strength, she joyed to find it did not fail. As Little Ella proclaimed that the man they were hiding had come to see her, Gloria sprang to the side of the bed, and cried with all the indignation of an overwrought soul:

"You lie!"

"That's what you say, but down in your heart you know it's the truth. It ain't the first time he's been here. Oh, he's told me about you, the boss's daughter; but it's me he loves."

The men were forgotten in this duel so elemental that it could have had the stone age for its setting. On one side, hate bitter as the grave; on the other, love and faith stronger than death itself.

"Every word you utter is a lie," Gloria blazed. "If you loved him you wouldn't have called these cutthroats."

"Why don' you tell 'em yer the boss's daughter now?" taunted the other.

"Look here, Ella," Ryan broke in, "we're tired o' standin' here like fools. Quit yer gassin' an' make good."

"You'll git yours all right. She's not David Kerr's daughter. Don' you let her bluff you. I know where she hid 'im. I'll tell you where he is."

Gloria turned upon the men.

"I've told you the truth, and I've warned you. Don't you come a step closer." Then she threatened the woman, "If you dare to speak a——"

Little Ella was not to be intimidated.

"When she dragged him in," she began, "she locked the door, an' then she——"

Gloria was standing at no great distance from the bed when Little Ella began her betrayal of Wright's hiding place. As she realized that in an instant the secret would be out, her eyes dilated with a look of hate. Then they narrowed to cruel slits, while a tremor ran thru her body. One who knew the girl would scarcely have recognized her. Like some lithe creature of the jungle waiting for the kill, she seemed to crouch for the spring. Just as the woman was about to utter the words which would reveal where the newspaper man was concealed, Gloria was upon her. She seemed with one bound to have leapt the space that separated them.

"You Jezebel!" she raged, and struck her fair upon the mouth.

Ryan and Kelly did not stir. The unexpected had happened, and they were held spellbound.

Gloria's breath rushed thru her teeth with a horrid, hissing sound, her face was flushed, her hair touseled, and her waist in disarray. Yet she heeded nothing but the wild impulse to defend her own.

Little Ella, her scant strength all spent, gasped out that she would tell nothing. Gloria was beside herself and the promise meant nothing to her. With a man's strength she lifted the woman up, held her there an instant, and then hurled her back upon the bed. Her head fell over the side, and she lay as one dead.

Her rage was still hot upon her as she turned to confront the two men.

"As for you, get out."

Ryan made one last half-hearted stand.

"Say, the boss hates that man. Are you really Dave Kerr's daughter?"

"And you need to ask such a question!" she stormed. "Ask Mike Noonan if you will, but beware of David Kerr! If ever you have cause to fear him, you have it now. My anger is his anger, and don't you defy the daughter of David Kerr!"

She took a step forward menacingly, as if she had strength to inflict the same chastisement they had seen administered to the woman. They did not stay to argue with her. Leaving Little Ella to her fate, they made a hasty retreat.

No sooner were they out of the room than Gloria put into execution what she had designed when they departed the first time. Rushing to the door she closed it hastily and pushed the washstand in front of it, wedging it under the knob. This done, she ran back and dragged Wright from his hiding place. There was no thought of the woman whose head hung over the side of the bed in such ghastly fashion.

Gloria lifted his head and dashed water upon his face. She watched him closely, and as she saw that it had no effect upon him, a sudden fear seized her and her cheeks were blanched. With trembling fingers she tore at his shirt and felt for the beat of his heart. She could feel its faint pulsation. He lived.

With a wild cry she flung herself forward in a deep swoon upon the body of the unconscious man.

(To be continued.)

SENSE AND NONSENSE

I have been driven many times to my knees by the overwhelming conviction that I had nowhere else to go.—Abraham Lincoln.

The heart is the source of everything, of our strength, of our happiness and our misery. All the knowledge I possess, everyone else can acquire, but my heart is exclusively my own.—Goethe.

Lost.—Gertrude, aged 3, sat in her high chair at the dinner table turning about in her fingers a small ear of corn from which she had been nibbling a row at a time. Suddenly she burst into tears.

"What is the matter, dear?" asked her mother.

"I've lost my place!" sobbed the little one.—Delineator.

Certainly It Yawned.—Travelers' tales, which often add charm to the conversation of an agreeable person, frequently render a bore more tiresome than ever, a fact that was amusingly illustrated by an occurrence in a Baltimore clubhouse not long ago.

"There I stood, gentlemen," the long-winded narrator was saying, after droning on for an hour with reference to his trip to Switzerland, "there I stood with the abyss yawning in front of me."

"Pardon me," hastily interjected one of the unfortunate men who had been obliged to listen to the story, "but was that abyss yawning before you got there?"—Harper's Weekly.

Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., June 16, 1913.

Butter receipts for the week were well sold up and the market is firm. Most of the egg receipts showed heat defects. Good stock was in strong demand. The demand for dressed poultry was sufficient to absorb the limited receipts. Market steady.

Butter.—Western creamery, 31c; extras, 29@29½c; firsts to seconds, 26@28c; special prints, 35@38c; near-by prints, 32c.

Cheese.—New York full cream, 17@17¼c; skims, 8¾@11c, according to quality.

Eggs.—Candled, 24@26c doz.; extras, 22c. Current receipts at $5.85 per standard case.

Poultry.—Fowls, 18@18½c; old roosters, 12c; spring chickens, 29@31c; ducks, 13@14c; pigeons, 23@25c.

Dressed Poultry.—Western fowls, 18@19c; roosters, 13½c; chickens, 18@19c; squabs, $3.50@4.50 doz.

Vegetables.—White potatoes, choice 40@45c bu. Onions, 90c@$1.10 bag. Cabbage, $1.50@2.00 crate. Lettuce, $1.25@2.00 basket. Cucumbers, $1.00@1.50 basket. Celery, 40c@$1.00 bch. Spinach, $1.25@2.00 bbl. Kale, 25@50c bbl. Egg plant, $1.50@2.00 box. String beans, 75c@$1.25 bushel. Peas, $1.50@2.00 basket. Peppers, $1.50@2.50 carrier. Tomatoes, $1.50@2.50 carrier. Watercress, $1.00@1.50 100 bchs. Asparagus, 6@15c bch. Beets, $2.00@3.00 per 100 bchs.

Fruit.—Apples, choice varieties, 25@75c hamper; $3.00@5.00 bbl. Cranberries, $1.25@2.00 crate. Strawberries, 5@10c qt. Blackberries, 5@7c qt. Cherries, 6@14c lb.

Hay and Grain.—No. 1 timothy, new, $16.50@17.00; No. 2, $14.00@15.00; No. 3 do, $11.00@12.00. No grade, $8.00@9.00. Clover mixed, No. 1, $12.50@13.00; No. 2 do., $10.50@11.50. No. 1 tangled rye straw, $16.00@16.50 No. 1 wheat straw, $9.00@9.50; No. 1 oat straw, $10.50@11.00. New shelled corn, No. 2 yellow, 69@69½c; No. 3 yellow, 68½@69c. Winter milling wheat, $1.03@1.05; No. 1 northern, $1.03½@1.04½. No. 2 white oats, 46½@47c. Standard white, 46@46½c; No. 3 white, 45@45½c.

Hides and Skins.—Steers, abattoir, 15@16c; do. country, 13½@14c. Cows, abattoir, 14½@15c; do. country, 12½c. Bulls, abattoir, 12¾c; do. country, 11¼c. Calf skins, Nos. 5 to 12 and up, $1.35@2.45; do. green, 13@14c.

Seeds.—Timothy, $2.65 bu.; clover, white, $25; do. crimson, $5.00; do. mammoth, $15.25; do. sweet, $13.00; do. alsike, $14.75; red top, per bu., $15.00; alfalfa, $7.00@10.00; Canada field peas, $2.75; vetch, $6.25; rye, winter, $1.50; spring, $2.00; soy beans, $2.50; barley, $2.50; buckwheat, $1.50; cowpeas, $3.00@3.25; millet, $1.50; oats, $1.20.

Coffee.—Rio, 7s, 9¾c; Santos, 4s, 11⅞c. Mild Coffee—Cordova, 14½@17c.

Provisions.—City beef, smoked, and air-dried, 25@26c. Beef hams, 34@35c. Pork, family, $22.00@23.00 bbl. Hams, cured, 15@16c; skinned, 15⅞@16⅞; smoked, 18@21c. Other hams, smoked, city cured as to brand, 18@20c. Picnic shoulders, 10⅞@11⅝c; do. smoked, 13@13½c. Bellies in pickle, 15½@17½c. Breakfast bacon as to quality, 20@25c. Lard, refined, 11¾@12½c; do. in tubs, 11¾@12½c; do. kettle-rendered, 11¾@12c. Tallow, prime city, 6½@6⅝c; do. country, 6⅝c; do. dark, 5½c; do. cakes, 7c.

Sugar.—Cut loaf, $5.15 cwt.; cubes, $4.60; powdered, $4.45; granulated, $4.35; standard granulated, $4.40; crystal A, $4.35.

Flour.—For 196 lbs., in wood, winter clear, new, $4.15@4.40; do. straight, new, $4.50@4.65; favorite brands, $5.25@5.60. Rye flour, Penna., $3.50@3.75.

NEW YORK PRODUCE

New York City, June 16, 1913.

The butter receipts during the week were large and developed in a weakness in the market which is, however, considered only temporary. Eggs are about as last week. A considerable proportion of the supply shows heat defects, for which satisfactory prices are hard to realize. Dressed poultry is somewhat scarcer than last week and prices have advanced a shade. Vegetables are slow and without change.

Butter.—Creamery firsts to extras, 27¼@28¼c; thirds to seconds, 24@27c; factory, 22@24c; state dairy, 24@27½c; packing stock, 20@22c; process, 24½@25½c.

Cheese.—Whole milk, specials, 13@13¼c; do. common to fancy, 12@13c; skims, 5@10c.

Eggs.—State and near-by, 22@25c; fresh gathered, 14@23c; mixed, 20@22c.

Dressed Poultry.—Turkeys, dry, 18@19c; chickens, Penna., 28@35c; fowls, 14@18½c; old roosters, 13c; ducks, 15@20c; roasters, 19@22c.

Live Poultry.—Fowls, 18c; chickens, 18c; old roosters, 12½c.

Grain.—Easy. Wheat, No. 2 red, nominal. No. 1 Northern, $1.04. Corn, 70c. Oats, standard white, 46½@47c.

Vegetables, Potatoes, new, $1.25@2.50 per bbl. Cabbage, $1.50@2.25 crate. Green beans, 50c@$1.25 basket. Carrots, $1.00@1.75 bag. Cucumbers, 30@75c doz. Lettuce, $1.00@2.00 bbl. Squash, 50@75c basket. Horseradish, $1.00@3.00 cwt. Parsnips, 50@75c bbl. Turnips, $1.00@2.00. Watercress, $1.00@1.50 per 100 bunches.

Fruit.—Apples, $1.75@4.00 bbl., according to variety. Strawberries, 7@20c qt. Peaches, $1.50@2.25 carrier. Cherries, 12@18c lb. Blackberries, 4@12c qt. Raspberries, 7@10c qt. Huckleberries, 20@30c qt. Gooseberries, 4@12c qt.

BALTIMORE PRODUCE

Baltimore, Md., June 16, 1913.

Altho butter receipts were liberal the demand was sufficient to absorb the better grades and prices remained about steady. A great deal of the egg supply showed heat defects and fresh stock was in strong demand. There was a good demand for dressed poultry, and prices on the choicest stock advanced a shade.

Butter.—Creamery, fancy, 31c; do., choice, 29@30c; prints and blocks, 29@31c; Maryland and Penna. rolls, 22c; prints, 30@32c. Process, 25@27c.

Cheese.—Flat, 17½c; Daisy, 18@18½c.

Eggs.—Md. and Penna., firsts, 20c; western, 20c; southern, 19c.

Live Poultry.—Hens, 18c; chickens, 17½@18c; old roosters, 11c. Ducks, 13@15c. Geese, 14@15c. Guinea fowls, 20@30c.

Dressed Poultry.—Turkeys, 24@25c; chickens, 20@21c; roosters, 11@12c; ducks, 20@22c; geese, 11@17c.

Vegetables.—Potatoes, white, 55@60c bu. Sweets, $3.00@4.00 bbl. Cabbage, $1.00@1.25 crate. Onions, 80@90c crate. Lettuce, 50c@$1.00 bu. Egg plant, $1.25@2.25 crate. Peppers $1.50@2.00 crate. Squash, 50c@$1.00 crate. Spinach, 30@60c box. Cucumbers, 50c@$1.50 basket. Beans, green, 75c@$1.00 basket. Turnips, 10@15c box. Cauliflower, $2.50@2.75 bbl. Horseradish, $1.50@1.65 box. Beets, 2@3c. Asparagus, $1.50@1.80 doz. Green corn, $1.25@2.00 crate.

Fruit.—Apples, new, $2.00@3.50 bbl.; 50c@$1.00 bu. Strawberries, 7@10c qt.

Grain.—Wheat.—No. 2 red western, $1.04; spot, $1.03½. Corn, spot, 63c; contract, 63c. Oats, No. 2 white, 45@45½c, standard white, 45c; No. 3 white, 44@44½c. Rye, 60@64c.

Hay and Straw.—No. 1 timothy, $17.50@18.00. No. 2 timothy, $15.50@16.00. No. 3 do., $12.00@14.00. Choice mixed, $14.50@15.00. No. 1 clover, $11.50@12.00. No. 2 do., $9.00@10.00. No. 1 tangled rye straw, $11.00@12.00. No. 1 oat straw, $9.00@10.00. No. 1 wheat straw, $8.00.

Millfeed.—Spring bran, $21.00@21.50; Middlings, flour to white, $26.00@28.00; western middlings, $22.50@23.00; city mills mids., $21.00@23.50.

BUFFALO PRODUCE

Buffalo, N. Y., June 16, 1913.

Butter.—Firm. Creamery, choice, 29½@30c; choice dairy, 26@27c.

Cheese.—Steady. Fancy, 15c; good, 13@14c.

Eggs.—Firm. State, fresh, 21@21½c; western, 19@20c.

Dressed Poultry.—Active. Turkeys, per lb., 22@24c; fowls, fancy, 17@20c; chickens, 16@20c, old roosters, 14@15c; ducks, 21@24c; geese, 17@18c.

Live Poultry.—Steady. Chickens, 17@18c; ducks, 21@22c; geese, 15@17c; turkeys, 20@21c; old roosters, 13@14c.

Vegetables.—Potatoes, easy. Home-grown, 60@65c bu. Cabbage, $1.75@2.00 crate. Onions, 40@80c sack. Beans, green, $1.50@2.00 hamp. Turnips, $1.00@1.25 bbl. Celery, 80c@$1.00 doz. Spinach, 40@50c hamp.

Beans.—Quiet, steady. Marrow, fancy, $3.35@3.40; medium, $2.30@2.50; red kidneys, $2.00@2.25.

Fruits.—Apples, $4.00@4.75 bbl.

Honey.—Firm. No. 1 fancy, 16@17c; No. 2 new, 14@15c; dark, 12c.

Hay.—Firm. Timothy, choice on track, $16.00; No. 2 do., $15.00@15.50; No. 3, $14.00@14.50; light mixed, No. 1, $13.00@13.50, rye straw, $11.00; oat and wheat straw, $8.00@9.00.

Feed.—Steady. Spring bran, $20.00 ton. Standard mids., $21.00. Corn meal, $25.50. Gluten, $23.75. Hominy, $25.00. Oilmeal, $27.50. Cottonseed meal, $32.00.

YORK PRODUCE MARKET

York, Pa., June 16, 1913.

The markets were well attended all last week. Strawberries and cherries were the principal attraction. Both were rather scarce, while cherries were high. The drouth has made the last run of berries very small in size. They averaged 10 and 12 cents per quart. Butter and eggs are both weak with nominal supplies of each.

Butter.—Country, 25@32c; separator, 33@35c. Milk, 5c per qt.

Eggs.—19@22c doz.

Poultry.—Hens, 15c lb.; springers, 25@27c lb. Dressed poultry, 45@90c each.

Vegetables.—Potatoes, new, 20@25c ½ peck; old, 60@70c bu.; cabbage, 3c each; lettuce, 1@6c; beets, 4@5c bch; radishes, 3@5c; onions, 2@4c bch.; lima beans, 12c qt.; soup beans, 7@10c qt.; sweet potatoes, 12@15c per ½ pk.; lard, 12@15c lb.; celery, 3@8c; rhubarb, 3@4c bch.; asparagus, 6@10c bunch; string beans, 30c per ½ pk.; peas, 15@24c per ½ pk.

Fruit.—Apples, 25@35c a half peck; strawberries, 8@17c box; cherries, 8@12c box; currants, 10c box.

Retail Grain Market.—Wheat, $1.09; corn, 75c; oats, 50c; bran, $1.15 a cwt.; rye, 65c; middlings, $1.40 a cwt.

Wholesale Grain Market.—Wheat, $1.02; corn, 63c; oats, 39c; rye, 55c.

WASHINGTON PRODUCE

Washington, D. C., June 16, 1913.

Eggs.—Near-by, fresh, per dozen, 21c; southern, per doz., 20c.

Cheese.—New York, new, per pound, 10½c; flat, 16½c.

Butter.—Best prints, per pound, 32@32½c; tub, 31c; process, 27c; undergrades, 25c.

Live Poultry.—Hens, per lb., 18c; roosters, 10c; springers, 26@28c; turkeys, 16@17c; geese, live, 10@12c; ducks, 15@16c.

Vegetables.—Potatoes, bbl., $1.25@1.75; 75@90c bu. Onions, 75c@$1.25 crate. Lettues, per basket, 50c@$2.00. Beans, 65@90c basket. Peppers, per crate, 75c@$1.50. Egg plants, per box, $1.25@2.75. Squash, per bbl., 50c@$1.00. Beets, $2.00@3.00 per 100 bchs. Mushrooms, per lb., 20@40c. Carrots, 2@4c bch. Cabbage, 75c@$1.25 crate. Radishes, 50c@$1.00 per 100. Cauliflower, $1.00@2.00 crate. Asparagus, $1.25@2.50 doz. Apples, $1.50@4.00 bbl. Strawberries, 4@16c box.

WILMINGTON PRODUCE

Wilmington, Del., June 16, 1913.

Fruits.—Apples, $1.00 basket; $5.00@5.50 bbl. Strawberries, 5@10c box.

Vegetables.—Potatoes, $1.00 bu.; new, $4.50@5.00 bbl. Cabbage, $1.50 crate; 25c bas. Onions, 45c bas. Spinach, $1.50 bbl. Sweet potatoes, 75c basket; $2.50 bbl. Kale, $1.25 bbl. Lettuce, $2.00 basket. Asparagus, $2.00@2.50 doz.

Poultry.—Chickens, live, 18@19c; do., dressed, 20@22c. Ducks, 13@14c lb.; dressed, 20c.

Eggs.—19@21c.

PITTSBURGH LIVE STOCK

Pittsburgh, Pa., June 16, 1913.

While the supply of cattle was fairly liberal last week, the market ruled active, with prices steady to strong on best grades. Plain and medium grades were only steady. Heifers were in fair supply and ruled steady. Fat cows were in liberal supply and sold lower. Bulls were steady. Today's receipts were 95 loads. With a good demand the market was active and higher on all desirable grades and steady on others.

Good to choice	$8.50@8.65
Good, 1300 to 1400 lb.	8.30@8.65
Medium to good, 1200-1300 lb.	8.10@8.25
Tidy, 1050-1150 lb.	8.00@8.15
Fair to medium, 900-1100 lb.	7.75@8.00
Common to good fat oxen	5.00@7.00
Common, 700-900 lb.	6.00@7.25
Common to good fat bulls	5.00@7.75
Common to good fat cows	4.75@7.25
Heifers, 700 to 900 lb.	5.50@8.00
Bologna cows	4.00@4.40
Fresh cows and springers	20.00@80.00

Veal calves were in fair supply all week and prices ruled steady. Today's receipts were 1,000 head. The market ruled slow at steady prices.

Heavy and thin calves	$4.50@7.00
Veal calves	9.00@11.00

With liberal receipts and a fair demand the hog market ruled active with prices steady to a shade higher each day. The week closed about 10 cents higher than the opening day. Today's receipts of hogs were 50 double-deck loads. Yorkers and mediums sold steady. Others were 5 to 10 cents lower.

Prime heavy	$8.90@
Prime medium weights	9.10@
Heavy mixed	9.00@
Best heavy Yorkers	9.10@
Light Yorkers	9.10@
Pigs as to quality	9.05@9.10
Common to good roughs	7.40@7.75
Stags	6.50@7.00

Sheep and lambs were in fair supply thruout the week. With a good demand for choice sheep the market ruled 25 cents per cwt. higher on choice sheep and spring lambs. While yearling lambs were steady, the common and medium grades of sheep were slow at steady prices. Today's receipts were 45 double-deck loads. With a light demand, the market ruled slow and 10 to 15 cents lower on sheep, and 50 cents lower on spring lambs. Choice yearlings sold steady, but others were lower.

Prime wethers	$5.50@5.70
Good mixed	5.25@5.40
Fair mixed ewes and wethers	4.25@4.75
Culls and commons	2.50@3.50
Spring lambs	6.00@
Culls to choice lambs	4.00@7.25

BUFFALO LIVE STOCK

Buffalo, N. Y., June 16, 1913.

The cattle trade after Monday last week was fairly active for choice butcher grades, with a fair supply. At the close heavy grades were slow and choice butcher grades steady. With a supply of 140 cars today the market was strong on all grades.

Choice heavy steers	$8.40@8.75
Medium	7.50@8.15
Yearlings	7.00@7.75
Plain heavy	7.75@8.00
Handy butchers	6.50@8.40
Good to choice fat cows	6.50@7.00
Good to choice heifers	5.75@6.00
Butcher bulls	7.25@7.75
Feeders	6.00@7.75
Stockers	4.75@6.75
Cows and springers	30.00@85.00

With a fair demand for calves trade was steady thruout the week but prices fell toward the close. With 1,600 head on sale today the price was weakened still further.

Choice veals	$10.00@10.50
Light and thin	4.00@6.50

Sheep and lambs remained steady last week with no particular change in prices. There was a fair demand for yearlings, and sheep sold firm for fair weights. Extremely heavy sheep were slow. Arrivals today totaled 40 cars.

Choice lambs	$8.50@9.00
Poorer grades	7.50@8.00
Yearlings	7.00@7.50
Wethers	5.75@6.00
Ewes	4.50@5.25
Sheep	5.25@5.50

Hogs remained fairly steady thru all of last week. Pigs declined in price, but heavier grades were steady. Hogs on sale today numbered 100 cars. The market was slightly higher on heavies, while light Yorkers and pigs made an advance of 10 to 15 cents.

Heavies	$9.10@9.15
Mixed and medium	9.10@9.15
Yorkers	9.10@9.15
Light Yorkers	9.20@9.25
Pigs	9.20@9.25
Roughs	7.75@8.00
Stags	6.00@7.00

NEW YORK LIVE STOCK

New York City, June 16, 1913.

Cattle receipts for the week were 8,017 head. The market is firm.

Steers	$6.75@9.00
Bulls	5.50@8.00
Cows	3.75@7.00

Dressed beef is firm. Native sides, 11½@13½c.

Calf receipts were 5,500 head. The market is steady to 25 cents lower.

Choice veals	$8.00@11.25
Good veals	5.50@7.00
Culls	6.50@7.00

Dressed calves easier.

City-dressed veals	14½@17c
Country-dressed veals	13@15½c

Sheep and lamb receipts were 18,958 head. Sheep barely steady, lambs lower.

Clipped sheep	$4.00@6.00
Wethers	5.50@5.75
Culls	3.00@3.75
Spring lambs	7.50@9.00

Hog receipts were 8,704 head. The market is higher at $9.10@9.25.

BALTIMORE LIVE STOCK

Baltimore, Md., June 16, 1913.

Beef receipts for the week were 1,362 head. The market is steady.

Steers	$6.75@8.15
Heifers	5.75@7.25
Cows	3.25@6.00
Bulls	6.35@7.00
Fresh cows	22.00@77.00

Sheep and lamb receipts were 4,751 head. Under a liberal supply the market is steady.

Sheep	$2.00@5.15
Lambs	6.00@8.55
Spring lambs	6.50@8.50

There were 7,631 hogs on sale during the week. Under a fair supply the market is steady.

Light western	$9.30@9.35
Heavy to medium	9.00@9.30
Near-by	9.00@9.30
Pigs	9.00@9.15
Roughs	7.50@8.00

Calf receipts for the week were 431 head. Most of the receipts were of unattractive stock, and under a fair supply the market is lower at $6.00@10.25.

ELGIN BUTTER QUOTATION

Elgin, Ill., June 16, 1913.

The quotation committee of the Elgin Board of Trade this afternoon declared butter firm at 28c a pound.

NEW YORK MILK QUOTATION

The wholesale price of milk is considered to be $1.41 per 40-quart can for class C; class B, $1.51. Official quotations have been abolished.

PITTSBURGH HAY AND GRAIN

Pittsburgh, Pa., June 16, 1913.

Hay receipts are lighter and demand has lessened. The poor stock lately shipped has had a depressing effect upon the market as a whole. Wheat and oat straw are dull, while rye is in stronger demand. No. 1 timothy, $14.00@14.50; No. 2 do., $12.00@13.00; No. 3 do., $9.00@10.00; No. 1 light mixed, $12.00@12.50; No. 1 clover mixed, $11.50@12.00; No. 2 do., $9.00@10.00. No. 1 clover, $11.50@12.00; No. 2 do., $7.00@10.00. No. 3 prairie, $10.50@11.00; No. 4 do., $8.00@8.50; No. 1 oat straw, $8.25@8.50; No. 2 do., $8.00@8.25. No. 1 wheat, $8.25@8.50; No. 2 do., $8.00@8.25; No. 1 rye, $11.00@11.50; No. 2 do., $9.25@9.50. Ear corn arrivals are in slow demand. No. 2 yellow, 64@65c; No. 2 high mixed, 62@63c. Shelled corn receipts are in excess of demand. No. 3 yellow natural, 63½@64c; sample, 60@61c. Oats are in slow demand and the market is dull. No. 2 white, 43@43½c; standard, 42@42½c; No. 3 do., 41@41½c; No. 4 do., 30@40c. The demand for middlings is fair. Market steady. No. 2 white mids., $23.75@24.25; No. 1 brown mids., $21.25@21.75. Winter wheat bran, coarse, $22.00@22.50; do., medium mids., $21.00@21.50.

TOBACCO MARKET

A general scarcity of plants, owing to continued cool weather and prevalence of insects, has developed. As much as $4 per thousand has been paid for plants in some instances. This, however, is considered a wholly unfair price and conservative growers will plant their land in corn or some other crop rather than pay it. In other localities plants may be had for $1.50 or $1.00 and even as low as 50 cents per thousand, these figures being far more in keeping with the actual value to the grower. The dry weather has made the use of transplanting machines a necessity. Many consider the machine preferable to hand planting, as by the latter it is necessary to tramp land while wet, thus packing and injuring the tilth for the entire season. Again, it is no longer possible to find the necessary labor to meet the great demand incident to the rush of hand transplanting, which, of course, must be accomplished immediately after rainfall.

The summer outing of the Tobacco Growers' Association will take place at Williamson Park, Lancaster, on Saturday, August 9th. The location was selected with reference to its beauty and accessibility. The attendance of all tobacco growers is desired. There are to be addresses on tobacco subjects by competent speakers. The affair is to occupy the entire day.

In most localities the 1912 crop has passed out of the hands of growers. In some places, however, a few crops may yet be found, as at Manor, where it is said that 20 acres remain unsold. Prices continue low and generally unsatisfactory, a fact that will reduce the acreage of the present year and facilitate the interest in Havana, from which it is thought net returns will be better. Packers complain of a dull trade, owing to a lack of jobbing business.

The general tobacco market, as reported from New York is active, with a demand for all kinds of leaf. In the Empire State the acreage will be greater than last year, it is claimed. In Wisconsin the situation is slow and uncertain, they having had but little real summer weather up to the present time. In this state the last of the 1912 crop has been delivered. The situation in Ohio is very discouraging, and this is one of the few sections in which it is now known that the acreage will be greatly reduced.—H. E. Tweed, June 16, 1913.

COUNTY NOTES

Carbon Co., Pa. (E. C.), June 12—Weather generally cool; severe frost May 10. Grain in fine condition. Grass also looking good, but making slow growth. Potatoes making satisfactory growth. Weather has been too cool for corn. Everybody busy cultivating, getting ready for late cabbage and buckwheat.—Bruce Brenckman.

Bedford Co., Pa. (S. C.), June 9.—Wet and cool, with light freeze on the 9th. Cattle very scarce and high in price. Grass and grain is looking good. Fruit is all frozen with the exception of orchards on high elevations, which will possibly have one-third of a crop. Spring crops are several weeks back as a result of the cold, wet weather.—N. F. Richards.

Putnam Co., N. Y. (S. E.), June 10.—Very cool and windy; occasional showers. Eggs, 30c doz.; butter, 38c lb.; hay, $21 ton. Rye and oats looking fine. Good crop of hay is expected. Corn and potatoes all planted, but not doing well on account of cold weather. Pomona Grange met on June 3d.—Wm. Seims.

Harford Co., Md. (N. E.), June 9.—Clear and cool; ground getting very dry. Stock looking well; beef and stock cattle scarce and high. Good demand for mules and horses. Wheat will be a fair crop. Red clover a poor crop. Some alsike looking good. Corn a good stand and growing nicely. Farmers working corn and setting out tomatoes; rain is needed badly for this. Labor very scarce.—D. G. Harry.

Cotton Crop.—The Crop Reporting Board of the U. S. Department of Agriculture reports the condition of the cotton crop on May 25 as 79.1 percent of normal, as compared with 78.9 on same date last year, and 79.9 the 10-year average for the date.

Congress on School Hygiene.—The fourth International Congress on School Hygiene, to be held at Buffalo, N. Y., the last week in August will have one of the strongest gatherings of special instructors and investigators ever brought together on such study. There will be special consideration of such subjects as "The Backward Child," "Teaching Sex Hygiene," "Tuberculosis Among School Children," "Teaching Health Principles," etc. There will be about 250 contributors to the program, including college professors, medical professors, health officers, physicians and architects.

Household

STRAINING STRAWBERRY JELLY

Put the strawberries into a stone jar, stand it in a kettle of cold water, cover the top of the jar, and boil slowly for one hour, or until the strawberries are quite soft. Now put a small quantity at a time into your jelly bag, and squeeze out all the juice. Measure the juice, and to each pint allow one pound of granulated sugar. Turn the juice into a porcelain-lined kettle, and stand over a brisk fire. Put the sugar into earthen dishes and stand them in the oven to heat.

Boil the juice rapidly and continuously for 20 minutes, then turn in the sugar, hastily stirring all the while until the sugar is dissolved. Dip your tumblers quickly into hot water, watch the liquor carefully, and as soon as it comes again to a boil, take it from the fire and fill the tumblers.—Marion Harris Neil.

DO YOU KNOW BEANS?

In the days of our grandmothers the bean bag contained a medley of shining seeds, the black butter, a favorite for snaps, the "cut-short," the "bird's-egg," the kidney—each with its special purpose. But while we have an infinitely greater variety from which to choose today, many have fallen into the habit of regarding all as just "beans," and paying little attention to the special uses for which the developments of the horticulturists are best adapted.

For the very earliest, we have found the Lightning always at the head of the list, either for snap or shell bean. Planted side by side with Early Red Valentine, it has proved decidedly the quickest to be ready for use, altho the large creamy pods of the latter render it for general use a more profitable as well as more beautiful variety. For market gardening and for canning, the latter must prove always a favorite.

Many prefer a white bean, but for baking purposes there is a rich flavor in the Horticultural which can not be equalled by any other variety. This is a pole bean, but does nicely planted among corn or sunflowers. If the latter are used as a support, allow one plant to a hill of beans, picking off the larger lower leaves if they shade the beans too much. This variety is excellent, either for shell beans in summer, or for winter use, but is not profitable as a snap bean.

The limas have a delicious flavor when stewed, being richer than almost any other variety. While the pole limas are the most prolific, if the season is short the bush varieties only can be depended upon to mature. Choose the one which matures best in your own locality, and then stick to it.

Once a synonym for poor land was that it would not even raise white beans. But we are beginning to find out that while beans grow on poor land, it pays better to give them good soil, cultivate well, and be assured that they will respond liberally to the kind treatment.—Bessie L. Putnam, Crawford Co., Pa.

TO PREVENT FADING IN COLORED CLOTHES

By Mary Mason Wright

Recently I was looking at some wash goods of a rather doubtful shade, and I asked the merchant if he thought it would fade. He said it was warranted not to fade, but he thought it depended altogether on how the goods were washed. "Some people can wash goods so that they will retain their color for years, while others will fade them in the very first wash; we have proven this by reports brought back to us by our customers in regard to colored wash goods bought from the same piece." There is much truth in this, for by careful treatment gowns of the most delicate color can be made to retain their color for several seasons.

Many shades of blue are particularly liable to fade, also the delicate shades of pink, lavender and green. I find the best plan to wash delicate tinted goods and flowered organdies and muslins is to wash them in bran water. Boil wheat bran in proportions of three pints to a gallon of water for a half hour; let it cool, then strain and wash the garments in it as you would use any suds. Unless the garments are very much soiled, this will effectively clean them; if much soiled, a little borax can be added to the water, or a little mild vegetable soap. Alkali, as found in most laundry soaps, is destructive to colors, especially delicate colors.

To set the color in blue goods soak the garment for two or three hours in a pail of water in which has been placed an ounce of sugar of lead, and place a little vinegar in the rinse water, about half a cupful to a pail of water. For dark blue colors I put enough bluing in the starch water to make a deep blue; this will not only help to restore any color that may have been lost in the wash, but also helps to keep the starch from showing on the goods. Pink, green and lavender, also self-colored linen should be soaked in strong salt water, then hung up in the shade and allowed to dry before washing them. Vinegar should also be used in the rinse water. A lump of alum added to the starch will help restore green, if faded.

I always keep on hand some packages of dye, and add a little to the starch water for starching delicate tinted gowns and waists. For instance, for a pink garment a little pink dye is used, being careful to get it the right shade before putting in the garment. Never use hot water for washing colored garments of any kind, for heat is destructive to colors. For the same reason do not hang colored garments in the sun or iron with a hot iron. The darker shades, such as black, navy blue and brown, are often as liable to fade as the more delicate colors, and should have the same careful treatment. If soap is used, do not rub it on the garments, and use only mild soaps, softening the water with a little borax so not much soap will be required. These colors should also be soaked in salt water before washing, unless you are positive they will not fade.

Black goods are liable to take on a grayish look after washing. To remedy this, put a little black dye in the starch water, if starch is used. Many prefer to use gum arabic for stiffening dark-colored goods, using about two ounces to a gown, dissolved in two quarts of hot water, which is allowed to cool before being used.

STRAINING STRAWBERRY JELLY.

GOOD SOAPS

Points to Consider in Buying Soap for Home Use

A knowledge of the chief characteristics of good household soap is necessary if one is to select soap intelligently. Among these characteristics the following may be mentioned as of the greatest importance: No fabric should be perceptibly weakened by soap, white clothes should remain white, colored clothes unfaded, and woolens unshrunken. A soap should not be wasteful of material or time; that is, it should neither dissolve too readily nor with such difficulty as to retard the work, or in the case of soft soap, fall and lie undissolved in the bottom of the tub. A soap should contain so little water that the bars will retain their form when dry, and shrink very little in drying.

A soap should contain so little rosin that when the hands are washed with it they will, after being rinsed, feel smooth and soft, not rough and sticky. If it gives a yellowish tint to white clothes, it should be suspected of containing too much rosin. There should not be enough free alkali present to give the sharp, biting sensation of lye when touched to the tongue, altho good laundry soaps usually contain some free alkali. This is not considered objectionable in a soap for washing white clothes. A soap should not contain so large a percent of fatty acids that these will separate when the soap is dissolved in water, because such a soap causes yellowing of the clothes, and does not cleanse as well as it should. A soap should not impart to the clothes a decided and tenacious odor. A soap should not contain so high a percentage of rosin as to cause it simply to suds well without cleansing properly.—Juniata L. Shepperd, Domestic Science Department, Minn. University.

Quick Breakfasts.—To housewives who do their own work I offer a few suggestions: After finishing the supper work, I prepare, as far as possible, the next morning's breakfast. I slice and trim the meat and have it ready in pan or broiler. The potatoes are sliced, bread cut, coffee ground and placed in coffee pot, tightly covered to preserve its flavor. If cooked cereal is used I have it all cooked ready to warm over, and if any member of the family carries a lunch box, I fill it carefully the night before, wrapping each article in waxed paper. Then I set the table and cover it over carefully. All this may be done in about 15 minutes in the evening, and the relief it affords in the morning can be imagined.

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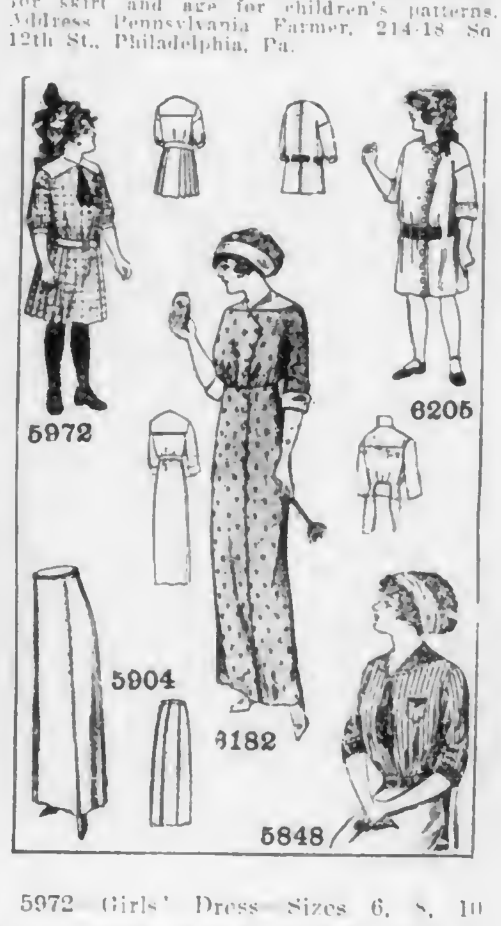

5972—Girls' Dress—Sizes 6, 8, 10 and 12 years. Age 8 needs 3¼ yards of 36-inch goods; ⅜ yard of 27-inch contrasting goods. Price, 10 cents.

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6205—Girls' Dress—Sizes 6, 8 10 and 12 years. Age 8 requires 3 yards of 36 inch material. Price, 10 cents.

5904—Ladies' Seven-Gored Skirt.—Cut in 5 sizes—22 to 30 inches, waist measure. Size 24 measures 2⅞ yards around lower edge and requires 3⅜ yards of 44-inch goods. Price, 10 cents.

5848.—Ladies Shirt Waist, Closed at Front, and with Short Sleeves.—Cut in 6 sizes—32 to 42 inches, bust measure. Size 36 requires 3¼ yards of 27-inch goods; ½ yard of 27-inch contrasting goods. Price, 10 cents.

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Veterinary

(Conducted by W. C. Fair, V. S.)

(Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also name and address of writer. Initials only will be published. When reply by mail is requested, it becomes private practice, and a fee of $1 must accompany the letter. This is one of the most valuable columns of the paper and we invite readers to make use of it. Clippings from this column, when properly preserved and classified, would make one of the most valuable medical symposiums a farmer-stockman could obtain.)

Bronchial Asthma.—I have a horse that had an attack of double pneumonia last March. Since then his lungs have been affected and his wind is bad. He is only 7 years old and I would like to know if he is curable. H. P. R., Brandywine, Pa.—Feed him no clover or musty, dusty, badly-cured fodder of any kind and not much bulky food. Give him a dessertspoonful of Fowler's solution, 1 dr. fluid extract lobelia and ½ dr. fluid extract gelsemiun at a dose in feed, 3 times a day.

Melanosis.—I have a 6-year-old white horse that has a lump or tumor on the inside of upper lip, about the size of a large hen's egg. This bunch was first seen 4 months ago, and it has gradually increased in size ever since. He seems to have a good appetite and does not show symptoms of sickness. W. A. F., Logsville, Pa.—Your horse suffers from melanotic tumors and the only treatment that will have any effect is cutting them out. This is a simple operation and usually successful, but similar bunches may appear in different parts of body. If the bunches are situated where you can reach them, do not hesitate to cut them out.

Sore Shoulders.—I have a 4-year-old colt that is troubled with sore shoulders, but there are no hard bunches. Ever since I commenced working him last spring his shoulders have been galled. If I rest him a few days, sores appear to heal over, but a hard day's work, especially if the weather is warm, makes them raw. J. B. T., Washington, Pa.—First of all, the collar may not fit. If so, you will find it almost impossible to keep his shoulders from chafing. Every work horse should be supplied with a nice fitting collar, one that is the shape of his neck and shoulder. The collar or sweat pad should also be kept clean. If you use a sweat pad it is a good plan to have two sets in order that you can clean and air them every other day. Dissolve ¼ lb. acetate of lead, 3 oz. of sulfate of zinc and 3 oz. of carbolic acid in a gallon of clean, boiled water. Apply this to sore shoulders, 3 times a day. Wounds always heal more quickly if your stable is clean and well ventilated.

Hollow Horn—Wolf in Tail—Indigestion.—One of my cows took sick 4 weeks ago. She seemed to lose her appetite for a day or two. I gave her a pound of salts which cleaned her out. Then she commenced eating fairly well, but she has not been right since. She seems to have fallen off in milk yield, now giving only 2 qts at a milking and she should give 6. She eats grass pretty well but seldom cleans up her shorts. We are now treating her for hollow horn and wolf in the tail. B. J. S., Euclid, Pa.—First of all, let it be understood that the horns of all cattle are hollow. When a cow is sick and the horns are hot, it is an evidence of fever; but if they are cold, it indicates a lack of vitality which is usually the result of some digestive disturbance or constitutional disorder. However, these are only results and should never be treated at the horn. A loss of cud is simply a cessation of rumination, and is one of the first indications of sickness in a ruminating animal, but a return to health means a resumption of cud chewing. The so-called wolf in the tail is another fallacious belief and is usually treated by splitting the end of the tail with a knife, filling the cut with pepper and salt and applying a bandage. This relaxed condition of the tail is only a result of other ailments, therefore the tail should be left alone. Your cow suffers from indigestion. Mix together 4 oz. powdered gentian, 3 oz. bicarbonate soda, 4 oz. ginger, 1½ oz. of powdered capsicum. Make into 12 equal doses and give 3 doses a day. A change of feed is always good practice when treating digestive ailments. Hollow horn, wolf in the tail and loss of cud are only traditional beliefs.

Bruised Arm.—I have a horse that jumped over the manger and landed in the hall. He was still tied when I returned to the barn. He was very much frightened, but I did not believe hurt. He is now lame in left fore leg, inside of arm considerably swollen and I believe his left shoulder is either bruised or sprained. This accident happened two months ago, and I have been treating him according to directions from neighbors, but with rather poor results. He seems to drag his toe and handles lame leg rather clumsily. For the past two weeks I have been working him some, for I need him. He does not eat or drink enough and I would like to know what will cure him. A. B., Hainesburg, N. J.—Your horse either jammed or sprained shoulder severely. He will be benefited by applying equal parts spirits of camphor and soap liniment to shoulder, twice a day. The more you work him, the longer it will take him to recover.

U. S. CROP REPORT—JUNE

The U. S. Crop Reporting Board reports condition of crops on June 1 as follows:

	Yield-per Acre.		Condition June 1.	
	1913 Bu.	1912 Bu.	1913 P.ct.	1912 P.ct.
Spring wheat ...	13.5	17.2	93.5	95.8
Winter wheat ..	15.9	15.1	83.5	74.3
All wheat	15.0	15.9	87.2	83.3
Oats	28.8	37.4	87.0	91.1
Barley	24.4	29.7	87.1	91.1
Rye	16.5	16.8	90.9	87.7
Hay	....	....	87.5	89.8
Pastures	....	....	89.2	93.7

NOTES

Peninsula and Maryland Horticultural Societies.—The firm of J. G. Harrison & Sons, noted nurserymen of Maryland, will entertain the Maryland State Horticultural Society and the Peninsula Horticultural Society, at Berlin, Md., on July 31. Invitations will also be extended to the members and officers of the horticultural societies of Pennsylvania, New Jersey, Virginia and West Virginia. Opportunity will be given for an examination of the Harrison orchards.

Farm Help.—The Cornell College of Agriculture announces that a considerable number of its students desire to find summer employment on farms. Some are experienced in farm work, while others have never worked on a farm. They expect to be paid just what they are actually worth. They will be open to farm positions until about September 15. Anyone having positions for such men should write to the Department of Farm Practice, College of Agriculture, Ithaca, N. Y.

General Crop Conditions.—The U. S. Crop Reporting Board reports general crop conditions, on June 1, 0.5 percent lower than on the same date last year, and 1.1 percent lower than the average condition on June 1 of recent years. With the normal average represented as 100, the general crop condition on June 1 in Pennsylvania are placed at 100.3; in New York, 95.4; New Jersey, 98.7; Delaware, 95.5, and Maryland, 98.5

Prizes for Shire Horses.—The Shire Horse Society of England, desiring to encourage owners and breeders of Shire horses in America, is offering 10 gold challenge cups, valued at $250 each, for Shire horse competition in this country in the years 1913 to 1917, inclusive. Two cups will be awarded annually to representative American shows. The International Live Stock Association has been selected for the 1913 offer, cups to be awarded to the best registered Shire stallion and best registered Shire mare. Horses entered for these cups must be registered, or eligible for registration, in the American Shire Studbook.

Production of Natural Cement.—Natural cement was produced in 1912 in 15 plants distributed in 9 states, according to the United States Geological Survey, there being no change in the situation compared with 1911 except a decrease in production. The output during 1912 amounted to 821,231 barrels, valued at $367,222, compared with 926,091 barrels, valued at $378,533, in 1911, a decrease of 104,860 barrels, or 11.3 percent, in quantity and of $11,311, or 3 percent, in value. The average price of natural cement at the mills in 1912 was 44.7 cents a barrel, compared with 40.9 cents in 1911.

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AGRICULTURE THE KEYSTONE OF NATIONAL PROSPERITY

ESTABLISHED 1880 PUBLISHED WEEKLY

VOL. 33.—No. 26. PHILADELPHIA, PA., SATURDAY, JUNE 28, 1913. 50 CENTS A YEAR.

Needle Dr. T J
Rutgers College
c213

Conservation of Soil Moisture---By H. M. ANDERSON, York Co., Pa.

The amount of moisture that we are able to secure and retain in the soil might be said to determine, to a large extent at least, the amount of produce that we are going to take from that soil. Since the amount of moisture present during the growing season depends more on our methods of handling the soil than on the rainfall at that time, it is very necessary that we do all in our power to see that there is enough and not too much moisture.

The amount of water necessary to grow a pound of dry matter in each of our principal crops has been carefully determined by the experiment stations. Corn, for instance, requires 300 pounds. The rainfall in Pennsylvania during the past 20 years has averaged about 38 inches, one-half of which falls during the five months following the first of April. This, taken in conjunction with what always exists in the soil at the first of April, would furnish abundant moisture to grow 100 bushels of shelled corn per acre if it is properly taken care of. As a matter of fact, the average corn crop of Pennsylvania is about 35 bushels per acre, and soil moisture is the limiting factor, three times out of four.

In the building of any structure, we must not only assemble the materials necessary for that structure, but we must also have workmen—the masons and carpenters, plasterers and painters—and in order that the structure may be built practically and economically, these workmen must work in harmony—each in the right time and place. Just so in "plant building," if I may coin such a phrase, we must assemble the elements that are to compose the plant when completed, and we must also have the four workmen, heat, light, air and moisture. In this scheme of plant building, water has to do double duty; it not only constitutes the bulk of the plant when grown, but it must act as one of the workmen as well, and its presence is necessary for the performing of the duties of the other workmen, for you know that all plant food taken up by the roots is taken up as a dilute solution in water.

The bulk of the soil is simply disintegrated rock of varying sizes, and since the soil moisture spreads itself in a thin film over each free particle of soil, the size of the particles of soil and their surface exposure are matters of considerable importance. The soil should be just porous enough to take in the maximum amount of rain water as it falls and then to store up the maximum amount of it within reach of the growing plants for future use. Generally a good soil in friable condition actually fills about half of the space that it occupies, while air and moisture fill the other half. The amount of open space in a soil is increased or decreased according to its physical condition, the degree of moistness at the time of cultivation, and the method of cultivation employed. For instance, if we work the soil when it is still quite wet, as so many farmers persist in doing, we pack the soil where every hoof and wheel presses it, and form clods that, when once dried out, are almost impervious to air and moisture, as well as to the roots of the growing plants.

We not only do a lot of harm, but it is impossible to get a fine earth mulch when the soil is wet, and such cultivation does very little good in the holding of moisture in the soil, which is the principal object of intelligent cultivation. On the other hand, it will not do to let the ground lie and bake and dry out too long. The evaporation of soil moisture is most rapid immediately after the rain stops and the sun and the wind begin to work on it. Just as soon as the soil is dry enough to prevent the making of clods, men and horses should be put to work cultivating it. There is one day, or, if we are to make the very most of our opportunity, part of a day after every rain, when cultivation will do the greatest amount of good. That is when it should all be done. Of course, this is a physical impossibility, but the sooner all of the exposed soil is covered with a fine earth mulch after the soil is fit to go on, the nearer we approach the ideal method of cultivation.

With this object in view I have found it very practical and profitable to wire two spring-tooth harrows together and let one man run them with four horses, and to use the 10 or 12-foot smoothing harrow when I possibly can. I consider the two-horse, two-row worker and the two-horse, 10½-foot sulky weeder, or mulcher, the most valuable implements that I have on my farm. Anything that will cover the most acres in a day without injury to the growing crop, and put a fine mulch over the soil, is the thing we ought to seek and use.

The scarcity of weeders in the sate of Pennsylvania is astonishing. I had occasion to travel several hundred miles across the state last week, a few days after a good soaking rain, and I think I am safe in saying that I saw 20 planted fields with an unbroken crust on them to one that had had a smoothing harrow or weeder over it. Then in July or August, or possibly in September, we will hear of disastrous drouths in Pennsylvania, of corn plants that are drying up and blowing away, of potato fields that will not produce the equivalent of the seed planted on them. Whose fault will it be?

We are prone to complain about deficient rainfall and try to put the blame on the Lord when our fields are parched and dry and our crops are withering, but I want to say that the occasions are very rare indeed when the Lord does not furnish enough rainfall to produce good crops if we only do our part well. It is only necessary to change the moisture line from the surface to a point an inch or two below it by cultivation, and in doing so enlarge the spaces in the surface soil and break the tops off the capillary tubes and you stop the loss right there. Water will not rise from a saturated soil to a dry one, but it will come up to the new moisture line just where the roots need it, and it will continue to come up to that point while the supply lasts.

When the rain falls more rapidly than it can get thru the soil, and fills all the spaces in the soil, it is called gravitation water, and while this condition lasts it goes downward under the force of gravity. When the rain stops, capillary action or surface tension will hold about one-half of this water where it is; the rest moves downward, giving off to capillary attraction what it demands until, if the supply is great enough, some of it reaches the ground water-level and helps to supply our springs and wells. Capillary action or attraction is the affinity of a liquid for any solid that is moistened by it. The rise of oil in a lamp wick is a case in point, and the oil is consumed by the flame very much as the water that rises in the soil is consumed or converted into vapors by the sun and wind. Surface tension is another peculiar phase of capillary action, and agriculture is dependent on it for success. It causes the only action of moisture in the soil when there is less than half saturation, and as this is the usual condition during the summer months, and this is often the only water available for weeks, some times even months at a time, it is of the utmost importance.

Surface tension tends to maintain an equal

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thickness of water films over all the particles of soil that come into actual contact with each other; in other words, to keep it all equally moist. This action is always from the more moist to the dryer particles of soil, and may be in any direction—upward, downward or laterally. We have all noticed how moist the ground is under a large, flat stone or a board that has laid flat on the ground for some time. That moisture never went down thru the stone or board, but around them, and has been drawn from the surrounding soil to that under the stone or board by surface tension. Then capillary action has brought it up to the obstruction and it can get no further. Capillary action is continually bringing up moisture, even in the dryest of soils, after protracted drouths. I wish to relate a personal experience:

Three years ago I had a field of rye and vetch which was pastured hard from April 15 to June 30. After June 11 there was only a trace of rain until September. I wanted to seed this field to wheat, and about July 20, when it was almost as hard as a stone, I gave it a double stroke with a disk harrow, cutting it one-quarter to one-half inch deep. After a few days we had one-sixteenth inch of rain, and I gave it another double stroke with the disk, cutting it one or two inches. After two weeks of dry, windy weather, I told my men one morning that we would start plowing the rye sod, and they said I was crazy, that I could not drive a nail into it, etc. But I had inspected it the day before and I found that I had arrested the loss of enough moisture from that rye stubble near the close of an eight-weeks drouth to enable us to plow it and put it in condition for seeding. We did plow it, and fined it just as we plowed it, and when the rain came in September it was in condition to grow a profitable crop of wheat.

Humus in the soil is essential to the securing and retaining of the maximum amount of moisture. It not only makes it more open and porous, thus enabling the soil to take up water much more rapidly, but a soil full of humus will actually hold more water, and it will not dry out as rapidly, as soil which is solid and dead. Humus is the greatest equalizer of soil conditions that we have. It will make a cold soil warmer, a hot soil cooler, a wet soil dryer and a dry soil more moist. As for getting humus in the soil if you have plenty of manure, there is nothing else as practical. If you have not, leguminous crops may be grown and plowed down. The ideal method is to grow leguminous crops, feed them on the farm and carefully save and apply the manure.

The only other method of increasing the soil's ability to hold moisture is intensive cultivation, and it, like humus, both enables the soil to take in water more rapidly and to hold better that which it has. I believe in deep and thoro preparation of the soil, and cultivation of the crops after every rain just as soon as the soil is fit to go on, beginning rather deep when the crop is young and ranging to just about the surface inch the last time or two. Harrowing the ground right after plowing and after rains before the crop is planted is just as essential to the saving of moisture as cultivation after the crop is planted. A man in plowing should stop long enough before dinner and before supper to roll and harrow what has just been plowed. Do not roll the ground and let it lie long in that condition, as capillary action will soon be established and the rapid loss of moisture takes place. If you must crush the clods after harrowing, hook the weeder behind the roller. It does splendid work, leaving a loose dust mulch.

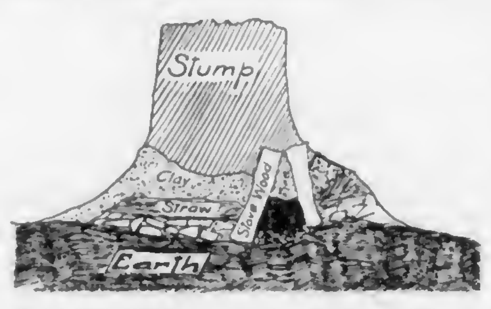
BURNING OUT STUMPS

There are many places where dynamite can not be used to an advantage in destroying stumps, such as the close proximity to buildings. Where this is the case the stumps can just as easily be burned out.

This process was first applied 40 years ago in a backwoods clearing in Oregon, and has been so successful that it is being used with success in many regions where stumps retard the clear cultivation of the land. The principle underlying this burning method is exactly the same as that employed by the charcoal burners. The roots of the old tree are reduced to charcoal and the stump can be lifted out.

The beginner should experiment a little before starting work on a clearing. Try making charcoal by scooping a hollow in the ground in which is placed some finely broken wood. At the top cord wood is placed, and, after lighting the whole pile is covered with straw or leaves and a second covering of loose clayey soil. The fire should burn with only a limited supply of air, so that charcoal will be made rather than having the wood entirely consumed.

The management of a stump fire is exactly the same as this small charcoal fire. The arrangement of material around the stump is as follows:



STUMP READY TO BE FIRED.

Chop away the bark from the lower part of the stump and pile finely split kindling around the base. Upon these lay sticks of stove wood size. Lay two of these sticks to the windward side, leaning against the stump with the upper ends meeting and the lower ends resting on the ground about 12 inches apart. In the triangle thus formed put some pitchy wood or shavings.

Next, cover the pile with three or four inches of leaves or straw, but leave open the triangular space on the windward side, and over the leaves place a similar thickness of loose, clayey earth, compact on top but loose at the bottom. Light the fire in the triangle. When the kindling is burning all around the stump and steamy smoke is issuing from the covering, close the opening with leaves, straw or earth.

As the fire progresses and the covering settles, breaks will appear, which should at once be covered with earth. If the smoke is blue and hot there is too much air getting into the fire and more earth is needed. When charcoal is forming, the smoke is brownish-white and has a strong odor.

In from three days to a week the roots will be burned out and the stump can be lifted out of its place and hauled away.

MARKETING FARM PRODUCTS

Our losses are greater, I oftentimes think, from our inability satisfactorily to market the surplus products of the farm than from raising only minimum crops. If a farmer begins in a small way, ordinarily his family and the necessary live stock equippage will be sufficient to consume in entirety his first year's productions. If he be of the right material there will soon come a time when his products, in various lines, will exceed the demands of home consumption; and if he has not studied the question of judiciously marketing the same he is at a decided disadvantage alongside of his more experienced neighbor and competitor. It is true that there are compromising conditions, such as remoteness from satisfactory markets, insufficient motive power, bad roads, lack of knowledge in grading and packing, inferior products and individual incapacity as a solicitor, but these can all be overcome in whole or in part. Hence the question naturally resolves itself to the following point: Seasonal conditions being favorable, how large shall the surplus be and how shall the marketing be done?

Whether it be the small grains, corn, potatoes or live stock, let the object always be to produce a matured crop of such a high standard of excellence that it will attract attention in the closest competition. Offer it in such neat form and so perfectly graded that it is both attractive and tempting. Be sure that whatever may be the package it is either full measure or full weight. Then, above all, tell the absolute truth when making a sale and stand back of every deal to the extent that if you have made any misrepresentation or if by accident or neglect in packing any inferiority is found, stand ready to refund the purchase price or duplicate the package.

By careful and intensive tillage, proper rotation and judicious applications of manures or commercial fertilizers one can carry on a process of soil building which will each year yield increased returns at little additional cost; thus not only coming into his own in a fuller sense, but raising such a surplus as to make necessary a full knowledge of how best to market the same. In my neighborhood, a few years ago, a neighbor having a young apple orchard of about 1,000 trees and a peach orchard having an equal number of trees, found himself with a full crop of each. The fruit had all been sprayed, was clean, free from blemishes, uniform in size and of excellent quality. Being situated where the demand was good it was not a question of selling, but of selling to best advantage. He was equal to the emergency, as the following recitation of facts will show. He went to a certain town, where he had an acquaintanceship with some leading citizens. He explained the situation and asked some of them to go with him to the leading retailers and wholesalers in fruit and vouch for his honesty. He solicited a sale for his superior fruit, explaining in honest language just what he would send. The result was the entire crop was disposed of at prices which were at least 25 percent above the average, and there was not a grumble of dissatisfaction. He made good by delivering exactly that for which he had bargained.

When the apple crop matured he sold his entire crop on the same basis. They were neatly packed, honestly graded and sold on merit. Into each package went a card bearing the statement. "This is sprayed fruit. It was grown, picked, packed and delivered by ———, of ———, Pa. If it is not full measure, or if it is not equal in quality to the representations made at time of sale, this package will be duplicated free of charge or the purchase price will be refunded." The result was that not one demand was made upon him in either line. All the surplus products from his farm are sold on a similar basis, with the result that he no longer has to hunt markets. The markets hunt him and he has, at least partially, solved the problem of marketing the products of the farm in a manner that is highly satisfactory, both to him and his patrons.

Here, it seems to me, is the gist of the whole matter. The buying public don't care much about the purchase price if the article is good and if the seller is ready and willing to stand back of his commodity. Let us see to it, then, that we raise maximum crops and sell to him who knows merit when he sees it, demanding for our products such prices as will justify us in the production of superior articles and being ready at any and all times to adjust any claim for neglect or dishonesty on our part.—W. M. Patton, Armstrong Co., Pa.

HOW TO COMBAT WIRE WORMS

This spring sweet corn and field corn showed injury from wire-worm damage. The corn failed to come up and examination of the dormant hills showed the grains hollowed out, and perhaps in some instances the dark-brown, hard, smooth, shining grubs were found with heads buried in the grain. Many remedies have been reported and thoroly tested, but until 1910 every really thoro test resulted negatively.

In the years 1908 and 1909, Prof. H. T. Fernald conducted careful tests in Massachusetts, and reported that coating the seed with gas tar, as is done to protect it from crows, then dusting it in a bucket filled with a mixture of paris green and dust until the seed assumed a greenish color, effectually protected it from injury. The wire worms did not attack the seed so treated. The entomologist of the New Jersey State Experiment Station, Dr. T. J. Headlee, this spring worked on this problem, and would like to have the experience of growers who have made a trial of this method.—D. T. H.

TILE DRAINAGE ON THE FARM

Drainage improves the physical condition of the soil by making it more granulated, porous and friable. Thus, stiff soils are more easily handled, the plants have a greater feeding area, and the available moisture in the soil is increased. Soils also absorb more of a rainfall, thereby decreasing erosion and damage by floods. Drainage also warms the soil, because the evaporation of moisture by the sun requires more heat which, if the excessive moisture is removed by drainage, is used in warming the soil.

Drainage aids in the preparation of land and the tillage of crops. Land can be plowed earlier in the spring and is better pulverized. Crops can be cultivated sooner after a rain and by closing small ditches with tile drains more improved machinery can be used and the cost of cultivation decreased.

Drainage also improves health conditions. Perhaps there is no better illustration of this than the number of mosquitoes that were found in parts of Illinois and Iowa when first settled. When the land was drained most of the breeding places of the mosquitoes were removed and with them the consequent malaria.

It usually increases the yields and profits of crops. It makes lands that are uncertain in production produce crops every year.

It brings into cultivation lands otherwise worthless. Not only can swamp lands be made tillable, but on farms where there are places too wet to cultivate, drainage will improve the land and cause it to produce good crops.

It is not uncommon for lands too wet for cultivation to produce when drained 60 to 70 bushels of corn and oats, or from 1 bale to 1½ bales of cotton per acre. On a great deal of land the increase in yields is often from 25 to 100 percent. In some years on some wet soils drainage may not pay, while on others it may be necessary in order to save the entire crop. By increasing the yields and decreasing the cost of cultivation, the profits and the value of the land are often doubled.—A. G. Smith, Department of Agriculture, Washington, D. C.

Live Stock

TO MARK PIGS

The man who keeps sow pigs of his own raising for future use as breeders in his own herd should mark his litters when small. This will enable the farmer to observe the development of any given litter, by which observation he may be led to select sows of more uniform quality. Some pigs get a good start over their litter mates for sundry reasons, and the selection of such sows, merely because large, does not mean any gain in the way of improvement of the herd. By having marked the pigs it will sometimes be observed that the pigs of some given sow are uniformly inferior from litter to litter. Such information will lead the owner to discard the sows that are not producing pigs up to the standard.

At two or three days old, before the pigs have run from the nest, make the mark by means of a punch; a harness punch is as good as any other kind. Make the mark in the form of one or two nicks, in right or left ear, varied in location from base of ear to point. Marks for a dozen to twenty litters may be distinguished in this way. One man may easily do the marking. By holding a piece of pasteboard under the ear while punching, a cleaner notch may be made.—Geo. P. Williams, Delaware Co., Ohio.

A SHORT HORN CHAMPION, AN IDEAL TYPE FOR BEEF PRODUCTION

BREEDING FALL COLTS

The attractive prices which horses are bringing have greatly stimulated the horse breeding industry of the country. Many more mares have been bred this season than for many years, yet a good many farmers find it a policy of questionable profit to breed their farm mares for the production of spring colts, for the reason that the mares must be laid off at a season of the year when they are needed in the harness, and must be put to work again as soon as possible. This treatment of the mare is a double tax upon her system, and the result is that the colt does not have a fair chance and the mare is generally reduced before the colt reaches the weaning stage.

It is generally conceded by those who have had long experience in the business that the farmer who breeds spring colts should, for best results, maintain more horses on the farm than are really needed to do the farm work, at least until some of the colts bred arrive at a workable age, when they may be used to tide over the season when the mares must be favored and thus broken in to a degree which will add to their market value. But for the farmer who has not been in the habit of breeding horses and who thus has no colts coming on that need to be handled, the breeding of fall colts offers inducements which should not be overlooked. Where just enough mares are maintained on the farm to do the farm work, part of them can be bred late in the season, and will raise fall colts without anywhere near the inconvenience to the owner that will be experienced if they are bred to foal in the spring or early summer.

Then the mares can be worked to their full capacity thruout the busy season, and need not be overworked and in many instances need not be worked at all during the suckling period. Thus the bother with the colts is reduced to a minimum, and by providing a suitable ration for the mares during the suckling period and for the colts after weaning a better growth and development will be secured than is generally the case with the colt foaled in the spring as usually handled upon the average farm. The colt will be in condition to turn to pasture in the spring and will go right on growing and will be nearly as well developed by the following fall as the colt that has the advantage of a few months in age but has been grown under less favorable conditions.

It is true that there is quite a sentiment against the fall colt, it being claimed by some that he will never have as good a coat as the spring colt. This, however, appears to be more of a theory than a fact, and it is reasonably certain that if proper care is taken in feeding both mare and colt, that nature will adjust the coat to the season quite as well as with the colt that is foaled in the spring. It is the common practice among dairymen to breed their cows so they will calve in the fall, in order to get a heavy milk flow at the season of the year when the product is the most valuable, and when by judicious feeding a maximum milk flow can be secured for a longer period than when the cows freshen in the spring. Yet the common dairy breeds of cattle do not develop a coat of hair like the Highland cattle carry, nor are they burdened by a heavy coat of hair in the summer season or deprived of a liberal covering in the winter. Nature is apparently as kind in this respect to the animals that are dropped in the fall as to those which are started at what is commonly thought to be a seasonable time. Hence there need be no hesitation on this score with regard to the breeding of fall colts.

Of course, this method of breeding demands a degree of intelligent feeding which is not required with the colt foaled in the spring, provided the mare can be spared for a run at pasture during the suckling season. This is the ideal method of breeding for the best results, but where it can not be followed, the fall breeding of colts will appeal to the farmer with a limited stock of horses and little winter work for them, and may be followed with profit in cases where the raising of spring colts is a matter of questionable wisdom.—A. D., Chester Co., Pa.

GOVERNMENT WORK AGAINST HOG CHOLERA

Under a special appropriation of $75,000 made by Congress "for demonstrating the best method of preventing and eradicating hog cholera," the U. S. Department of Agriculture has undertaken practical experiments in combating this disease. The appropriation becomes available July 1, and work will be begun first in Dallas County, Ia., and will be taken up later in Indiana, and in one or two other states. In Iowa the work will be done in co-operation with the state veterinarian and the Iowa State College.

A few years ago the Bureau of Animal Industry of the Department of Agriculture, after years of experimentation, developed a serum which has been demonstrated by repeated tests to be very effective in preventing hog cholera. In many states this serum has been prepared and distributed to farmers with the result that large sums of money have been saved to the farmers, but thus far no systematic effort has been made to eradicate hog cholera. In the work which is now begun the control and eradication of the disease will be the main object, the serum being used in connection with the necessary quarantine and educational measures.

In the work in Iowa, representatives of the state college and of the Bureau of Animal Industry will make a survey of the county, estimating as closely as possible the losses from hog cholera during previous years, and securing the names and addresses of hog owners. Thru lectures and demonstrations at farmers' meetings and by personal interviews, they will also explain to the farmers the object and nature of the work. The state veterinarian will issue and enforce such restrictive regulations as may be deemed necessary, after conference with federal officials, to prevent the spread of the disease. The Bureau of Animal Industry will prepare and apply the serum and will undertake to control each outbreak of hog cholera existing in the county at the time the work begins, and also such subsequent outbreaks as may arise during the year. The serum treatment is preventive rather than curative, and will be administered to hogs on infected farms and on neighboring farms with a view to checking and preventing the spread of the infection.

Hog cholera has for many years been a scourge of the hog raising industry, causing heavier direct losses than any other animal disease in this country. The losses for last year are estimated at $60,000,000. In the face of a short supply and high prices of meat it is becoming imperative that something should be done to check the ravages of this disease. Armed with an effective preventive treatment, the Department of Agriculture hopes by means of these demonstrations to demonstrate a method which can later be applied on a large scale thruout the infected regions, so as to control and eventually to eradicate hog cholera and thus stop the heavy losses and help to increase the country's meat supply.

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Horticulture

STRAWBERRIES

The production of strawberries as a field crop seems to many people highly impractical if not altogether absurd. Our ideas regarding farm crops, and general farm methods, vary over so wide a range that to get a common understanding of the subject we must see the subject as far as possible from a common point of view.

The subject of fruit areas and fruit-growing in general appeals to the small farmer more universally than to the man whom necessity does not force into some line of intensive farming for a livelihood. Be this as it may, the commercial strawberry field comes directly to the rescue of the small farmer or he who is starting out with little capital and must have some cash crop to bring quick returns during a few formative years. Under such conditions when selected by close students who are naturally keen observers the strawberry rarely fails to come to the rescue in a most satisfactory way. In general, few crops are more reliable or succeed over a greater range of conditions. Under whatever circumstances, the prospective grower must first master the general requirements of the crop and then furnish such conditions as shall meet those demands satisfactorily. With the large stock of reliable information that can be obtained by anyone who can read, at a minimum of cost, there is no reason why such a venture should meet with entire failure. Notwithstanding this fact there are more failures in the fruit field from lack of acumen on the part of the operator than from all other causes combined.

The man who essays to grow strawberries profitably in commercial proportions must realize the fact that he is entering the field of a specialist—special lines of farming universally demand closer students, better conditions and advanced methods. Hence at the outset it should be remembered that the strawberry grower to handle strawberries as a farm crop successfully must first become a thorough student of the subject, familiarizing himself with every phase of the question from the experience of others and then apply those fundamental principles most essential to success in any vocation, viz: close application and skilled observation. Thus equipped the business man can go forth to win in any branch of agriculture.

In the production of strawberries, as in many other special lines of farming, experience often proves most perplexing and contradictory. Not infrequently the beginner meets failure the first year, and by opposite methods the next season falls into a similar experience; while, had chance accidentally reversed the methods for him and made them fit the seasons or other essential conditions, both ventures would have terminated successfully. Again, over-confidence often works to the disadvantage of the inexperienced grower. After one or two years of successful efforts in this line the novice often feels equal to any emergency, and for a time judges himself fully competent to answer any knotty question that may arise in the strawberry field. After 10 years more of constant contact with berry growing he realizes more fully that a finite being is manipulating the strings to an industry that has been touched by the infinite, and that while we live in this world we can but do our part well and trust for results. This naturally brings us to the subject of

Adaptability

There is no one phase of the whole subject of general fruit-growing that is of greater importance, and yet is so much disregarded, as is adaptability. This question comprehends more than would be considered at first thought. The supreme importance of location, elevation and soil properties must receive the closest scrutiny. The location must be studied from many standpoints for best results. The conditions to be considered here are of two classes, general and local. Under general conditions meterological tendencies should be studied. The extremes of temperature, during the growing period and especially when the plants are in fruit, is of vital interest. In all humid climates the strawberry does its best in cool, moist sections. Those sections subject to extreme heat in the fruiting season are to be regarded as less fortunate, while those subject to frosts in the blooming period require more work and skilled treatment to bring a field of berries thru safely. Again, sections peculiarly subject to excessive storms are less desirable. A hailstorm often destroys a crop of berries after the cost of growing is practically met; and constant rains at either blooming or harvest time too often make the difference between loss and a substantial profit. Drouths also are a serious enemy of the grower, and beds located in such sections while they must have thoro drainage, still they will be much easier carried over a dry period by growing them on soils that are naturally moist or have the water table near the surface. Local conditions to be considered are much more easy to guard against but too often prove a serious menace.

Some sectional obstacle may intervene to render the practical working of the plant difficult. Any section where sufficient help for the picking season can not be economically obtained is severely handicapped. A location subject to the ravages of roughs from near by towns often make a crop difficult to harvest to the owner's benefit. Again, some sections are subject to the ranges of birds and insect pests that make the strawberry crop a hard one to bring to the desired market.

In this condition elevation also must be considered as a prime factor. Other things being equal, the strawberry field that enjoys atmospheric drainage is in the strongest position and will often pass unscathed by a belated frost when adjacent fields less favorably located will be heavily damaged.

Another point to be considered under the head of adaptability is the congeniality that must exist between the soil and the plants for best results. He who would grow berries on a soil that has a distinctly sandy nature must naturally look to a different class of varieties than he who would employ a firm clay soil. Some varieties, like Dunlap and Warfield, will succeed on a wide class of soils, while those of the Marshall type must be much more carefully suited.

So also with frost, heat, drouth and periods of deluge. Some varieties will succeed under trying conditions of one sort and others of another. As a rule, those varieties with short fruit stems that hold the blossoms well among the leaves will endure much more frost than those that throw their fruiting stems well away from the foliage.

Again, for best results it is important that there be a fondness on the part of the grower for the varieties grown. This feature of the subject is too much disregarded for best results. A grower will invariably do better by varieties he is fond of growing than by those he endures. Many large growers who cater to a general market narrow this subject still farther and say that for best results the man must select a single variety and then furnish ideal conditions that can in the last analysis be suited to the absolute demands of a single variety. Thus this whole question of adaptability emphasizes this point; there is a place anywhere in the scale for a grower, making it possible for him to grasp a few principles and enter the berry field as an indiscriminate grower, hoping at best to obtain indifferent results, or he can apply himself with all the mental energy he possesses and naturally expect results in direct proportion to the amount of energy expended.

STUDENT GARDENS AT STATE COLLEGE.

Preparing the Land

After locating a site for the berry field the work of fitting it becomes pertinent. This can best be done by giving the area a year's preparation. However, if time does not permit, and the land is not already occupied by an old sod, a fairly good chance can be given the plants by prompt methods. Space will not permit a detailed discussion of this subject, but common sense and observation will be the best guide. Unless the soil was left clean last fall or in stubble there will be danger from white grubs and cutworms. If cutworms are present the ground should be plowed deeply at the earliest possible moment in the spring; then by thoro culture keep the ground in the finest possible condition until the cut worms become inactive. Late spring is not generally recommended, but of two evils choose the lesser.

The fertilizers necessary for strawberries can best be determined by using different home mixtures, experimentally, and let the plants speak for themselves. This is like other lines of personal experience that comes late for the first year; however, the man that is awake to the situation will use every means available to prepare for a second crop and make as close a guess as possible for the first. For the best results strawberries need a soil made loose by an abundance of humus. A soil rich in humus and nitrogen is often better off without a dressing of stable manure. In the fruit area manure must be regarded as a one-sided fertilizer, destined to stimulate the vegetative functions of the plant at the expense of its fruit buds—and so throw the strawberries out of balance. Potash and phosphoric acid must be regarded as supplemental to clovers and stable manure, and for best results are essential. The best time to apply phosphoric acid and potash with a fertilizer drill is while fitting the land. Another popular method is to apply directly in the row after the plants are set. An ordinary grain sack with a bottomless half-pound baking powder can tied thru the lower corner is to be recommended for a distributor. This should be partly filled and tied as for sowing grain. A little experience will enable the operator to sift onto the rows as much or little fertilizer as is desired—the flow being regulated by the hand placed over the lower end of the can. In fertilizing strawberries experience shows that plants need more fertilizing in a dry year, and will produce equally good results with less in a wet season, also that a fertilizer the excessive use of which might demoralize the plants in a wet season might produce favorable results in a dry year, under the same conditions.

Where heavy feeding is employed the only safe method is to make two or more applications thru the growing season, varying the quantities used to suit the sorts grown and the season. It is by no means necessary to conclude that strawberries always respond profitably to any fertilizer. Often a strong piece of land well handled and well balanced in all the elements of fertility may produce the best results without any fertilizer. Thus the question of fertility becomes purely local and must be largely determined by local tests. To make this tentitive work as thoro and systematic as possible is the duty of every commercial grower. In general it is safe to assume that phosphoric acid is more often deficient in the stronger soils of the central north than potash. Quantities to be applied to the acre must of necessity vary with soil conditions. Usually not less than 300 pounds of phosphoric acid per acre should be ventured, while in extreme cases a much heavier application will bring returns equal to many times its cost.—C. B. Cook.

LEARNING BY DOING

The accompanying illustration shows a view over a portion of the student gardens at State College, as they appeared at the recent excursion day, June 5. This is a splendid example of the modern idea in teaching and is one of the strong features in truck garden work at State College. The strip of garden shown thru the center of the illustration represents a great deal of thought as well as labor. Some time last fall the student who had charge of this plot of ground was required to draw up a plan. This plan included the general arrangement of the plot, the selection of vegetables to be grown, the order and distance of planting, etc. Selection of vegetables was based upon adaptability of soil and drain of the crop upon soil fertility, character of growth, adaptability to markets, time of maturity, comparative profits and such other problems as every market gardener must solve for himself.

Following his general plan, the student during the winter months made up his fertilizer formulas, purchased his seeds, started them in the greenhouses, guarded them from disease and insects and prepared them for early planting. Early in the spring term he hardened them off for transplanting, and when conditions were right transferred them to the open plot, seeded his intercrops and cared for the plots until the close of the college year.

The plot shown contains 15 rows, including 8 different vegetables. The order of planting from left to right in the illustration was red beets, lettuce, cabbage, lettuce, cabbage, onions, brussels sprouts, beans, red radishes, beans, head lettuce, peas, white radishes, peas and beets. These plots were scored the day before the photograph was taken, and the mark in this work will be used in determining the student's grade for the year.

The practical market gardener will immediately appreciate the value of such work to the student. It is practical, and just what every gardener must do for himself before he is a master of his profession. There are endless possibilities for variation and experimentation in such plots, and the student gets the full benefit of the results of his own work as well as that of his classmates.

PRUNING CURRANTS AND GOOSEBERRIES

By W. J. Wright, New York School of Agriculture

Currants and gooseberries, like other fruits, must be pruned to secure best results. But in pruning we should assist Nature, and not work against the natural habit of the plant. For example, currants are naturally shrubs or bushes and should be pruned and trained as such, and not as trees or in the tree form. Successful pruning of these fruits rests on three principles which, if kept in mind, will form a safe guide in all cases: (1) The plants tend to set more fruit than they can well mature, so it is necessary to limit the number of canes. (2) Fruit is never borne on new wood but on wood that is at least one year old. (3) Wood over five or six years old bears fewer fruits than newer wood, and they are smaller and inferior in quality.

A GOOSEBERRY BUSH BADLY IN NEED OF PRUNING.

New wood can easily be distinguished from old wood because the bark on the new canes is light gray in color, while on the old canes it is dark. Very old canes are large in size, and have a great number of short branches. The bark also on these old canes usually hangs from them in strips, and they have an aged and unhealthy appearance. (Nature's sign that they have passed their usefulness).

In starting a plantation of currants or gooseberries allow the canes or branches to come out just at the surface of the ground. Not more than four should be allowed to grow the first year. The second summer several new canes will come out at the base of the bush if it is vigorous. It is best to limit these to three or four. Allow about four more new canes to develop the third season, making a total of about 12 at the end of the third year. During the fourth summer allow four more new canes to develop, but cut out the four oldest immediately after fruiting, and continue to follow this practice; that is, allow four strong, new shoots to develop each year and cut out the four oldest immediately after fruiting. By this simple and easy method vigorous bearing wood will be secured which will produce the choicest fruit and will not be crowded by old and useless canes. The old canes should not be cut out until after fruiting time as this will materially reduce the crop.

Old plants may be pruned by gradually cutting out the oldest wood and allowing a few new shoots to develop each year until the number of bearing canes has been reduced to about 10 or 12. Vigorous, old plants may sometimes be able to mature fruit on as high as 15 canes, but the quality of the fruit is rarely as good or the size as large as when fewer canes are allowed to grow.

GRAPE ANTHRACNOSE

Anthracnose of the grape, or bird's eye rot, caused by a fungus, is a disease of considerable importance on certain varieties of grapes grown in the eastern United States. While it does not seem to attack the Concord, which is the most extensively grown of American varieties of grapes, most of the other wine and table grapes are very susceptible to anthracnose. Anthracnose affects practically all the green parts of the plant. On the green shoots it causes cankers. On the grape berries it first appears as light-brown spots, which rapidly become darker and are soon surrounded by a circular bright-red zone, which, as seen against the green background of the grape, presents the very striking appearance that gives the disease the name of "bird's-eye rot." The berries in later stages of the disease shrivel and dry up.

Of the different mixtures used for controlling this disease, the self-boiled lime-sulfur is perhaps the least promising. It burned the foliage somewhat, and there were more diseased fruit and wood in the plot sprayed with this mixture than in that sprayed with bordeaux mixture. The fungicides used in treating the dormant vines all seemed equal in efficiency. For commercial purposes, however, the ease with which the mixture may be prepared must be taken into consideration. From this viewpoint the concentrated lime-sulfur seems to be the best, as it is easily prepared and can be applied with any good sprayer.

According to Mr. Hawkins, anthracnose was controlled in the experiments by pruning out the diseased wood and applying any one of four different treatments to the dormant vines. The fungicides used successfully on the dormant vines were two concentrations of the iron-sulfate and sulfuric acid mixture, a 4-percent solution of sulfuric acid and a concentrated lime-sulfur solution (1-10) A careful pruning out of the diseased wood and treatment with summer sprays of 4-3-50 bordeaux mixture reduced the damage from disease to practically nothing. In contrast to the results from the treatment the loss from disease on the control plots in 1911 was 32.6 percent and 12.2 percent. In 1912 the loss on the control plot was 10 percent of the fruit. In addition to the diseased fruit the young shoots and foliage in the controls were considerably injured, while the treated plots were practically undamaged.

Mr. Hawkins states that in combatting anthracnose it would probably be advisable to combine the treatment of the dormant vines with the use of the summer spray, especially since black-rot or downy mildew of the grape is usually present. The experiments conducted by the Department of Agriculture are described in Circular 105 of the Bureau of Plant Industry, which will be issued by the Department of Agriculture in a few weeks.

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The Dairy

SHALL WE FEED GRAIN IN SUMMER?

The usual questions relative to the feeding of grain in summer are coming up these days. In June there is usually feed enough in the pasture for the cows. It has been our custom for several years to go on feeding grain even in June. Of course, we do not feed heavily at this season, and there are some cows that do not get any grain. One or two will get very little from now on until the time when they freshen in the fall. These are giving very little milk and are in good condition. If the pasture gets very dry later in the summer, it is probable that even these cows will be fed a small amount of grain.

It is desirable that a cow shall be rather on the gain than losing flesh when she comes fresh. That is the reason for a little grain as noticed. We have among the rest two young cows that came fresh late in May. One that is giving nearly 50 pounds of milk a day, and is rather thin at that, is having all the grain that she will eat.

The last was her second calf, and she milked up so near calving that we could not get a coat of flesh on her. It seems difficult to coax her to eat more than six pounds of grain a day. I am told that it does not pay to feed this cow grain when the grain costs nearly $30 a ton and milk is bringing about $22.

As for the profit of feeding in this way, I must confess that it does look dubious. It is generally believed that if a pound of grain costs more than a pound of milk, then it does not pay to feed the grain. I am a little of that opinion myself, so far as the immediate results are concerned. I am looking some time ahead for my profits. This is a good cow. Unless I feed her well she will not only grow poor, but she will shrink in the amount of milk by so many pounds that there will not be the profit in the fall and winter that I want. If I can keep up the flow of milk by the extra feed I figure that I will get my money back later in the season. Several of the cows that are due to freshen in September and October are being fed some four pounds of grain. These are giving 30 pounds of milk or about that, and I believe that in the long run I will win by feeding the grain.

If one wishes to omit the grain feed in June and commence the feed as soon as the pasture shortens in summer, I have no criticism to offer. To wait until milk brings $1.50 per hundred pounds and the milk flow has shortened is too late to bring up the flow to a point that will bring a profit during the fall and winter, or at least not the profit that one should have. Many think that they can increase the flow late in the fall by the addition of grain to the feed. I suppose it will help a little, but when the flow is once checked it can not be re-established fully until another period of lactation. For these reasons I am inclined to favor some feeding the most of the summer, if one does not care to feed all summer long. The condition of one's pasture has much to do with deciding the grain question. Acreage and ability to produce under adverse conditions are factors.—H. H. Lyon, Chenango Co., N. Y.

TWO YOUNG HOLSTEINS ON PASTURE, BRADFORD CO., PA.

METAL FLAVOR IN BUTTER

Economic conditions make it necessary at present to hold butter in storage from the summer season, when it is plentiful, to the winter season, when it is scarce. If the butter is properly made this can be done without materially injuring its quality. It often occurs, however, that butter which has been held in storage for some months develops disagreeable flavors that greatly lessen its value. These bad flavors that will often pass unnoticed when the butter is fresh may become so serious a defect after three or four months in storage as to render the butter almost unsalable. The chemical changes which cause these bad flavors are often too small to be detected by the ordinary analytical methods of the laboratory, but the senses of smell and taste are far more delicate, and as soon as bad flavors are detected by them the value of the product is lessened.

Some metals either cause or greatly accelerate certain bad flavors in butter, altho most of the experiments along this line have not included storage butters. Recently the staff of the Dairy Division of the Bureau of Animal Industry has reported that the presence of very small amounts of iron in cream causes certain undesirable flavors to increase in intensity during storage. These flavors are often designated by butter experts as "metallic," "oily," or "fishy." The injurious effect of iron was found by adding iron in known quantities, varying from 1 to 500 parts, to a million parts of cream. The butter made from such cream was compared with that made from cream where all precautions were taken to avoid any undue contact with iron during the whole process of butter making. The butter was stored at 6 degrees to 10 degrees Fahr., and the quality of the butter was scored by experts at different times.

In every instance when the butter was scored a few days after making, the samples to which iron had been added scored lower than the butter made from cream which contained no iron. This held true in most cases on the second and third scoring, which occurred at intervals varying from 20 to 187 days. The most noticeable feature was the rapid development of bad flavor in the butter containing the iron. When both the control and the experimental butter became fishy, it was noticed that the control butter was the last to become so. There was a marked oily flavor present in most samples that subsequently became fishy. Only a small proportion of the iron added to the cream was found in the butter, the remainder having been taken up by the buttermilk and wash water.

Butter was also made from cream which had stood in rusty cans, and in every case this butter had a peculiar taste and was easily picked out from all other samples. The buttermilk also had a decided metallic taste.

The influence of copper on the flavor of butter was studied in a similar manner, and it was found that copper, even in small quantities, seemed to cause more marked changes of flavor in butter than did the iron, with a decided tendency toward a fish flavor in storage. Two experiments showed very plainly the harmful effect of using poorly tinned pasteurizers, even tho the cream came in contact with the copper surface for only a few seconds, for, aside from this, all other conditions were exactly alike during the complete process of butter manufacture.

This work shows that if cream is kept in rusty cans or comes in contact with iron or copper at any time during the process of butter making it may take up iron or copper from rusty cans, exposed bolt heads, or other metal parts of pasteurizers or churns in sufficient quantities to affect the flavor of storage butter. Altho there is nothing to show that the nature of the flavor is appreciably changed, it does demonstrate very clearly that the rate of development of the undesirable flavor is greatly accelerated during storage by very small quantities of either iron or copper.

UNITING THE DAIRY INDUSTRY

The management of the National Dairy Show at Chicago have launched what should be an intensely interesting feature of this year's show, namely, a "Round Table Talk," the purpose being to assemble the breed men, the farmer, the milk producer, the milk dealer, the creamery man, the ice cream manufacturer, the cheese maker, the butter man, the machinery people, the agricultural college dairymen, the agricultural press representatives, and the railway men who look after the dairy industry, around one table looking one another in the eye and discussing in an amicable way the best methods of procedure to advance the interest of the dairy cow in America.

It is not within the most sanguine hope of the getters together of this group that all can go by peacefully, but where can you get a bunch of men who are doing things that always agree? With men of the class who have been appointed as delegates to this Round Table, much good should emanate from the meeting for the whole industry, and the National Dairy Show is taking its position as a clearing house for all things "dairy" in this move, and results from this first getting together of every branch of the dairy industry will be closely watched. Something must be done to bring the dairy industry up to somewhere near taking care of home demands, at least, and the Knights of the Round Table look like a good proposition.

CONTROL OF TUBERCULOSIS IN COWS

According to a report of an experiment conducted by the Virginia Experiment Station, it hardly appears advisable to attempt to save cattle that show a reaction when tuberculin tested.

An experiment lasting three years was conducted by the station to determine whether or not an attempt at curative treatment of tuberculosis would be practicable as an adjunct to the eradication of the disease from dairy and breeding herds. Twenty cows and one bull, all of whom had reacted to the tuberculin test, were used in this experiment. One group of animals was kept in a close, dark, unsanitary basement barn and not well fed or cared for. Another group was kept in a well-lighted, well-ventilated, sanitary barn, fed highly nourishing food, and given special care. Each animal in the third group, treated like the preceding, was kept in a separate stable and paddock, so that if cured by hygienic treatment, the disease could not be contracted again from other animals. Four cows died of tuberculosis during the treatment, all from the two groups receiving the best care. After three years the remaining animals were slaughtered. Post-mortem examination did not indicate that the disease had been checked.

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COST OF PRODUCING MILK

Farmers' Bulletin 522, compiles from reports of the New Jersey Experiment Station, the following interesting notes on the cost of producing milk. It says:

The increased cost of feed and labor and the rise in the price of good cows without a corresponding increase in the price of milk gives special significance to any accurate data bearing upon the actual cost of milk production. Such data are furnished by records given in a report of the New Jersey Experiment Station, of 31 head of milk cows, mostly grade Holsteins, Jerseys, Guernseys and Ayrshires, fed both home-grown and purchased feeds, the calculations of cost of production being based both on the actual cost of growing the crops fed and on the market prices of the products used. The feeds used included soiling crops of different kinds, corn silage, mixed hay, oat and pea hay, alfalfa hay, corn stover, beet pulp, distillers' grain, wheat bran and oil meal.

The average cost of feed per cow per year (based on actual cost of producing the crops used) was $95.73, or 2.4 cents per quart of milk produced. Placing the market valuation upon the home-grown products, the cost of feed per cow per year was $121.60, or 3.4 cents per quart. The estimated average cost of labor (but not supervision) and incidental expenses was $70.22 per cow per year, or 1.76 cents per quart. The incidental expenses include bedding, stabling ($5 per cow) interest on investment in animals, depreciation in value of cows, keep of bull, etc., but not interest on land, buildings and dairy equipment.

Based on actual cost of growing and harvesting products consumed and of labor, the total cost for feed, labor, etc., for the year was $165.95 per cow; based on market valuation of feed consumed it was $191.82. The yield of 31 cows averaging 8,661 pounds of 3.96 per cent milk, the total cost per quart of milk will be in the first case 4.16 cents, and in the second case 4.8 cents. No credit, however, is given the cow for the manure voided or the calf produced; neither is the farmers' time charged for. Calculating the manure worth $20 per cow, and the grade calves $6 each at 5 days old, the cost of producing 4 percent milk, even with the high yields reported, and not including cost of supervision, was approximately 4 cents per quart.

A more complete discussion of this subject is given in Farmer's Bulletin 469, of the U. S. Department of Agriculture.

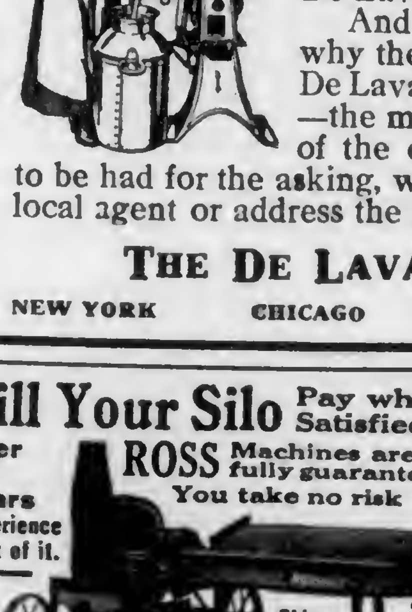
HOW MUCH SHOULD THE SILO HOLD?

The amount of silage required and the size of silo needed to hold it can be quite closely calculated, provided the number and kind of animals to be fed from it are known before building.

An average cow or beef animal may be fed about 35 pounds of silage per day, and the usual period during which silage is used can be easily determined. Large animals, or those that are being fattened, may consume considerably more than 35 pounds per day, but this has been found a fair average.

In a silo of ordinary depth, the average weight of the silage is about 40 pounds per cubic foot. Near the top of the silo, however, where the pressure is not great, it will weigh only 25 pounds per cubic foot, while at the bottom of a 35-foot silo it may weigh 60 pounds. Taking these averages, if a cow eats 35 pounds of ensilage in a day, she will eat thirty-five fortieths, or seven-eighths, of a cubic foot per day, and with this as a basis it is easy to determine the number of cubic feet of ensilage required to feed a cow or any number of cows thruout the season. The diameter of the silo must be such that the stock on hand can use one or two inches of silage off the top each day during the winter and at least three inches per day when summer feeding of silage is to be practiced. This is necessary to keep the silage from spoiling.

A silo 10 feet in diameter is adapted to feeding 10 mature cattle. One 12 feet in diameter will feed 15 head, and one 14 feet in diameter will meet the needs of 20 head; but if there are 30 or more cows to feed, a 16-foot silo should be erected. These silos should be 30 or 40 feet, or even more in hight. —A. D. Wilson, Minn. Univ. Farm.



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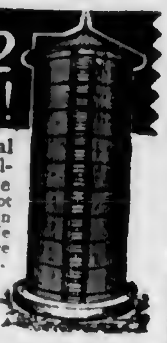

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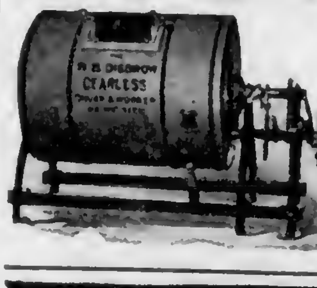

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Poultry

PRODUCING QUALITY EGGS

By Albert L. Roat, Philadelphia Co., Pa.

I started in the poultry business in 1898, in a small way, which to my mind is the only positive method to pursue. Occasionally only do men succeed in the "chicken game" unless they develop their plant and stock gradually. It is the surest system.

What I have accomplished others can do likewise, provided the same application is given to the work involved. Then, too, the wise man who contemplates a venture into the "chicken game" must assure himself, even before his venture, that a hen requires something else besides corn and a stick to roost upon before she fills his egg crates. For instance, grit to aid digestion; charcoal for her stomach; fresh drinking water, supplied in clean containers; coal ashes for dusting; bright, well-ventilated quarters; green food occasionally; these are all necessities and must be adhered to. They must be fed a grain diet and some form of lime to supply their egg shell. Also a scratching compartment, because hens must be workers. Drones are to be eliminated, if you intend to collect money instead of feathers.

With all these foregoing facts settled clearly in mind, I started my chicken farm. I purchased a dozen pure-blooded Plymouth Rock hens and mated them with a pure White Wyandotte rooster, not a cockerel. I started out with the express purpose never to breed a young rooster, and that's why I honestly believe my stock is so healthy and strong.

These birds mated and the hens were faithful egg producers. Their offspring were birds that resembled both their father and mother. Also a few mixed colors. However, their eggs were fair sized and heavy, and the first point gained toward what I determined to accomplish, a large, rich, heavy egg and a chicken with short yellow legs freed from the least semblance of feathers. In fact, I desired to produce an egg and market chicken combined.

To get all these admirable qualities, of course, I was satisfied to wait results because I felt assured success would attend my efforts. It did. The full heavy breast and yellow legs began to show in this first crossing.

I selected 50 of what I considered the best birds for points I wanted from this cross of Barred Rocks and White Wyandotte rooster. Their eggs were plentiful, and in the following spring I mated these hens to three Buff Rock two-year-old roosters. This second crossing produced some buff and some barred youngsters, a few white and mixed colors showing among them.

Their offspring were 300 strong, and with 200 of the choice pullets I mated Rhode Island Reds. Five hundred chicks were the result of this mating and they were a fine frisky lot of birds.

Five hundred beautiful pullets from this cross were mated with prize winning Partridge Wyandottes. Their youngsters were built from the ground up on lines and principles I tried for originally. Their plumage resembled their fathers'. In fact, they were almost ideal from my point of view, and when dressed for market, the yellow fat showed thru their pale golden skin.

And, so, each year I have continued to mate different purebred rooster strains, following back to Barred Rocks, White Wyandottes, Rhode Island Reds and Partridge Wyandottes. To be sure, my chickens are mixed. I expected that. However, I created what I wanted, large sized chickens and a large, heavy egg, just what I attempted to get from the beginning.

In this mixing method of breeding, I was careful, tho, not to use non-setting hens, because I gave up the incubator idea long before I began to produce this mixture of what I consider the best chicken for the farmer to give him the best results.

My plans demanded every chick be hatched and mothered by a hen. And this principle has been strictly adhered to. I tell my hens apart, the two-year-olds from the yearlings, by banding them with celluloid rings. One year I band the right leg, the next year I band the pullets on their left leg, and so on year after year.

I fatten my two-year-olds the first week of April and sell them before the Jewish holidays. I sell them alive at 22 to 25 cents a pound. These people don't purchase a killed chicken. Get rid of your old hens. Cull out your undesirable stock at this time.

My slogan has always been "hatch early chicks." Of course, I realize many others don't agree with me. However, I know my early birds grow largest; besides, they lay eggs when the other fellow is producing none. In this case, the early bird is not after the worm, but money, and he invariably gets it.

GOOD COLONY HOUSE FOR YOUNG STOCK

Early hatched chicks give me a flock of birds, pullets and cockerels. I never keep the cockerels. I select the best pullets from my own viewpoint and then fatten those undesirable pullets and cockerels for market. They sell for early broilers, and are out of the way before the market becomes glutted

I place the chickens, 12 to a coop, in a low-built, latticed affair. They are freely supplied with grit and charcoal, water and milk. I feed them night and noon all they can eat, but remove the food left as soon as they act stuffed. It requires 10 days to two weeks to get them to perfection, when they are sold at 50 cents a pound as "milk-fed chickens."

I fatten my chicks with a mixture composed of three parts corn meal, one of flour, a little salt and milk. Be careful not to mix this to a "sloppy" consistency. At night I feed them cracked corn.

I consider this mixture the best fat and weight producing mixture known and vouch for its adaptability for my stock. It puts on weight, and when you consider that I bring them to two pounds and get a dollar each, then you'll agree that early-hatched chicks do two things for me under my system: They give me a top price for broilers, and they give me hens that will lay eggs when the other fellow is waiting for his hens to commence.

This year 1,000 birds are running free in a grass field, contented and happy. I'm positive many of them would tip the scales at two pounds May first. I set my eggs under hens in a quiet, clean, well-ventilated outbuilding. They are tested the seventh day for fertility, and barring accidents, I get a perfect hatch. I give each mother 18 chicks and place them in a latticed coop in a grass field, with the coops six feet apart, facing the south. The youngsters are permitted to run loose and their mother is given freedom when the chicks are two weeks old. When they reach their sixth weeks, the chicks are taught to roost in a building. Their mothers are fattened and sold. They are all two-year-olds.

My chickens pens are dry, clean, bright, well-ventilated quarters with southern exposure. The birds are supplied with every comfort for their convenience. They are rarely troubled with disease. Roup never. Of course, a chicken will get sick occasionally, but it is removed immediately to other quarters, and either treated or killed, according to circumstances.

I bathe my youngsters' heads the day they are born with sweet oil. It seems to prevent colds, a most distressing disease to contaminate the coops. Rarely do lice show. Never do they accumulate. Also, I am particular that my water pans don't become stagnant or slimy or the pens foul smelling. Chickens can't thrive in filth. I consider tobacco stems a vermin preventative, and use them in the coops and nest boxes. All my buildings are whitewashed and sprayed regularly. I supply my laying hens with a dry mash composed of 3 parts each of crushed oats and bran, 2 parts wheat middlings, 2 parts corn meal, 2 parts meat meal, 1 part cottonseed meal, salt and ground mustard, all mixed together and fed in a hopper.

Their regular night and morning food is strewn among their scratching litter, and they are compelled to hunt it. This feed is wheat, kaffir corn, barley, buckwheat, sunflower seed, whole and cracked corn. When the weather is mild, I omit the corn; but in cold weather I increase the amount. At noon they get a light grain mixture, mangels cabbage and any green food. Every pen is supplied with grit, oyster shell and charcoal continually. All hens are trap-nested and drones are eliminated. Every hen must earn her allowance or get off the farm. I'm no fancier. I don't pretend to breed show birds, but as a farmer I offer my ideas.

Note.—How long could such crossing of breeds be continued before reverting to the original mongrel type? This experience is interesting, but a continuation of the practice would seem dangerous to the average poultryman.—The Editors.

A GREAT POULTRY STATE

The last decade has witnessed an immense stride in the poultry industry in all its phases. With the development of scientific knowledge in managament, poultry raising has come to be more of a specialized industry as exemplified by the thousands of large flocks scattered over the country. In 1910 the value of poultry raised in New Jersey was $3,841,029. During the same year the number of eggs produced was 15,000,000 dozen, the average price realized being 23 cents, which is the highest average yearly price received by any state in the Union.

The Single-Comb White Leghorn is the predominating breed, due largely to the white-shelled egg, which is preferred by the New York market. These fowls are kept for the production of market eggs, the idea being to practice a method of management which will produce a maximum quantity in the winter, during the season of high prices. New Jersey has the honor of possessing the largest White Leghorn farm in the world, it being located in Burlington County, in the pine belt. On this farm approximately 18,000 birds are kept, in units of 500, under almost ideal conditions.

New Jersey is famous for her broilers, the terms "Philadelphia Milk Fed" and "Philadelphia Capon" being trade names appreciated only by those who have experienced the pleasure of tasting them. Hammondton, Atlantic County, is the home of the specialized broiler industry of the United States, where it started with a boom over 27 years ago. At present, however, the great mass of Jersey broilers are produced as a side line to egg production or general farming thruout the state.

The poultry raisers of New Jersey are favored in having the best markets in the land directly at their doors. New York is the best egg market in America, while Philadelphia, on the other side of the state, leads in dressed poultry. During the summer season the resorts along the shore consume an immense amount of the best quality of poultry products, for which an attractive price is paid.—D. T. H.

POULTRY

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Grange

This department is conducted by R. P. Kester, Lecturer of Pennsylvania State Grange. Notes, queries, comments and news of grange work are invited from readers. Obituary notes and news of purely local interest can not be used. Address all communications for this department to R. P. Kester, Grampian, Pa.

EDITOR'S NOTES AND COMMENTS

People do not grow famous in a hurry, and it takes a deal of hard work even to earn your bread and butter.—Louisa M. Alcott.

Personal Notes.—The editor is leading the strenuous life at present. This is the month of Summer Pomona meetings, special meetings, etc. The picnic season is opening and numerous demands are made in that direction. Speaking two or three times a day and traveling at night is not calculated to fit one for writing bright editorials.

However, the meetings I have been attending in the western part of Pennsylvania, the Pomona Granges in Washington, McKean, Clarion and Erie counties were inspiring occasions. They were well attended and full of life and interest. At one session at Waterford, in Erie County, there were 500 present.

Not only were these meetings valuable from the social point of view, but in every instance the discussion of economic, political and farm questions showed a live and intelligent interest in the things which make for the betterment of agriculture and the upbuilding of rural life.

The Frost.—June 9th will long be remembered thruout a great part of Pennsylvania, not as Black Friday, but as Black Monday. The withering hand of Jack Frost was stretched out and his touch changed bright hopes to dark despair on many a farm. His visit a month previous blighted the bright promises of a bountiful crop of fruit, so that the outlook is for a 15 or 20 per cent crop only.

On the morning of June 9th the temperature dropped to 27 degrees in many places, and nearly as low on the morning of the 10th, destroying raspberries, strawberries, tomatoes, potatoes and beans and injuring corn and peas. We arose at 4 o'clock on our farm and all hands turned in at once and tried to save tomatoes, beans and potatoes by sprinkling and spraying with cold water. For a time it looked favorable. But it was of no use. The freeze was too hard. The sun arose bright and smiling, and 15 minutes after his rays touched a plant it was black and wilted.

It was with heavy hearts we turned our steps toward breakfast. Then we became aware for the first time of the grand chorus of singing birds. They were voicing the optimistic spirit of Nature who is never discouraged. Defeated, she immediately begins anew. It was seemingly an effort on the part of these feathered songsters to cheer the drooping spirits of man, and they succeeded. At once came the words, "And shall He not much more clothe you, oh, ye of little faith." So we began at once replanting and cultivating, and a week's time has made much improvement, except in the fruit.

The Fourth of July.—If every grange would arrange to hold a safe and sane Fourth of July celebration, keeping in mind the fact that the order is opposed to war and preparations for war, it would aid in developing the universal peace idea. To have the idea that war and war-like display are the only proper ways to display patriotism is to have the most barbaric conception of the true meaning of patriotism.

We may have at our celebrations constructive, patriotic addresses, inciting men and women to the highest type of citizenship. A good citizenship is a stronger defense then masonry and guns. It is time we eliminated the old-time, ranting, spread-eagle Fourth of July orator.

It is time sane, sober people of all nations awakened to the real size of the incubus of war and the preparations. If every citizen realized that out of every dollar expended by this nation 72 cents are spent for militaryism, leaving only 28 cents for all other purposes, surely the good business sense of the nation would put a stop to it. If we realized that there is an unseen lobby at work representing the manufacturers of warships, war implements and the professional military class, manufacturing war scares and helping to incite race prejudice we would have less fear of the war bogy.

Leaving out of consideration the suffering and horrors of war, economic reasons should and will put an end to it. It is short-sighted to believe that war, building warships and guns brings prosperity by giving employment. It is an economic truth that time and money are wasted when they are spent upon things for which the world has no real need. No nation is so rich that it has time, money or lives to waste. Let us paraphrase the old saying, "Peace hath her victories much more renowned than war."—R. P. Kester.

THE SINGLE TAX IDEA

We give below a communication on single tax. This idea has a great many intelligent advocates, and since the taxing system is so generally unsatisfactory, it is the duty of every citizen to give the subject of better methods a careful study. What the future equitable plan will be, it is impossible to say now. The oppressive taxes of the real estate owner, that is, the owners of farms and homes, is fast increasing the number of people who are demanding that all wealth shall pay its just share of tax. In Pennsylvania, one-third of the wealth of the state pays two-thirds of the taxes collected. Will the single tax solve the problem? Let us have short, concise articles, for or against the plan. Of course, it is necessary that writers know something about the idea. We shall have more to say about the matter later. The first communication follows:

A Fine or a Tax

Will you allow a city dweller to give a few hints to the farmer? I do not intend this for the pecuniary benefit of the "land speculating" farmer, or for the intellectual diversion of the gentlemanly farm "faddist." I want to talk to the farmer who tills the soil in order to provide good things for himself, and hopes to exchange his surplus for the surplus of other producers.

Such a farmer must have land, and he should also have more or less of certain products of other men's labor, which we can lump under the term improvements. Our present system of taxation taxes him in both of these widely different values, and the amount which he pays on each is assessed by an assessor or board of assessors, who either follow custom or precedent, or in a haphazard, unscientific way of their own. This generally results in the overburdening of the thrifty, hard-working farmer, while the lazy and shiftless farmer escapes with little or no punishment. Does this appeal to your sense of justice?

Just as long as we tax improvements (fine would be a better term) we may expect to see farm property offered for sale at prices which would not replace the buildings on them.

How much better would it be for the farmer to only pay for the extra privileges (natural and artificial) which he enjoys over his neighbors? Suppose, in making our assessments, land alone was considered, and its natural advantages, extra fertility, nearness to market, condition of roads, etc., were made the basis of taxation? Who would be wronged? Suppose we had an intelligently charted and easily procurable soil survey, and a better knowledge of the benefits of co-operation, not merely looking toward a meager saving in the cost of living, but looking forward to the time when bad roads have ceased to exist, and when the railroad and waterway magnate will think of the farmer as a partner in the great business of producing, and entitled to a just share in the profits of production. The magnates will do this just as soon as the farmer shows his fitness for the position.

As far as I know, there is only one solution to our present taxation difficulties, and only one plan that will stop fining the enterprise and industry of farmers and other producers, and that is the single tax on the value (or rent) of land.—Oliver McKnight, Philadelphia.

A DUTY TO PERFORM

Save the Birds

Today I was in my orchard and saw the rapid destruction of the foliage by the tent caterpillar. An unusually warm winter had been favorable to the preservation of their eggs, and the trees were covered with the larva which I had failed to destroy. Suddenly a bird appeared and rapidly filled himself to capacity, which was several of the worms. I thought, if there were only enough birds they could consume all of the caterpillars and save the foliage on my trees. Then the thought followed, if the trade in the feathers of wild birds for millinery purposes was entirely prohibited all over the world, the birds would combat the insect parasites on my fruit trees far more successfully than I am able to do with insecticides, at no cost to me.

All this reminded me that I had a duty to attend to at once, in writing to my Congressmen, asking them to vote for the paragraph in the tariff bill now being argued in Congress, which reads as follows: "Provided, that the importation of aigrettes, egret plumes or so-called osprey plumes, and the feathers, quills, heads, wings, tails, skins or parts of skins of wild birds, either raw or manufactured, and not for scientific or educational purposes, is hereby prohibited, but this provision shall not apply to feathers of domestic fowls of any kind."

Many will want to know why the passing of this bill prohibiting the importation of the plumage of wild birds in the United States will effectually prohibit the killing of wild American plumage birds. The reason is obvious. Those who try to enforce laws in the different states prohibiting the killing of wild plumage birds are unable to do so, for they can not tell whether feathers on the finished millinery goods are domestic or imported, so the slaughter of American birds can be secretly carried on, even if prohibited by law. To further prove this statement, I quote from a recently published article in a journal before me. The writer says:

"I sat within six feet of Jacob De-Jong, of the New York Flower and Feather Company, when he addressed the Ways and Means Committee, on January 29. In answer to a direct question put to him by Congressman Harrison, this prominent and expert milliner gave utterance to the following remarkably frank and truthful statement: 'It is my opinion that if Congress prohibited the importation of aigrettes, that would do away with the trade of aigrettes in this country absolutely.' "

I think that farmers all see the importance of the provision in the tariff bill I have quoted and realize that they should lose no time in using this opportunity to promote a bill now before the people. The benefits that will follow the enactment are great and far reaching. The American farmer so far has concerned himself but little about bird protection; in fact, he has been almost criminally negligent, and his voice has hardly been heard in protest, while the American and foreign forests have been searched for plumage birds, and so nearly destroyed that the farmers are almost helpless in combatting the great increase of insect pests. Some standard and profitable fruits are being given up by some orchardists because they are unable to protect their trees.

I would appeal to the women all over the land to use their influence to get the bill passed, and refuse to wear feathers of wild insectiverous birds. Women who are so zealous in temperance work and other reforms, and who are asking for the franchise, would show their fitness for it better if they would reform their millinery and show the people their position on the question of bird protection, and refuse to help in a cruel business and debar the progress of a profitable agriculture.

T. Gilbert Pearson, in an article in the Craftsman, says: "The greatest opportunity that has ever come to the American people to deliver a crushing death blow to that portion of the millinery trade which has fatted and waxed rich on the bloody trophies torn from the quivering bodies of parent birds, slaughtered while engaged in the care of their young, now lies clear before us. Let every man, woman and child who really cares for the decent things of life, write at once to their Representatives in Congress and demand in the name of humanity and justice that they cast their votes for this bill, which will make the United States the leader of all the powers of the world in the matter of bird protection."—J

Note.—There is urgent need of every friend of the birds joining in securing the passage of this measure. The prohibitory clause passed the House, but it is in grave danger in the Senate. An amendment introduced by Senator Clapp provides exceptions to the clause which would prove disastrous to the effectiveness of the anti-importation proviso. The millinery feather interests recognize this and they are backing the amendment, with considerable promise of having it recommended by the sub-committee in charge. Now is the time to help save a needed and worthy measure. Take it up in your granges; write your Representatives and urge your neighbors to write.—The Editors.

A New York Pomona.—About 200 patrons attended the Pomona meeting of the Dutchess County Grange, New York, June 4. It was voted to hold meetings hereafter around the county with the granges in alphabetical order, except that the semi-annual meetings shall be held at Poughkeepsie. Prof. T. A. Clinton, agriculturist in charge of the North Atlantic Division of the Bureau of Farm Management, of Washington, D. C., spoke on farm management. State Lecturer Alexander also addressed the meeting on co-operation. Wiccopee Grange has the largest membership in this county, nearly 200.—J. W. D.

PENNSYLVANIA FARMER
AGRICULTURE THE KEYSTONE OF NATIONAL PROSPERITY
ESTABLISHED 1880 PUBLISHED WEEKLY

Established 1880. Published Every Saturday.
Entered as second-class matter at the postoffice at Philadelphia, Penna.

The Lawrence Publishing Co., Proprietors
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TERMS OF SUBSCRIPTION
One Year 52 copies to one person $0.50
Two Years 104 " " " " $1.00
Three Years 156 " " " " $1.25
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Philadelphia, Pa., June 28, 1913.

DO YOU FAVOR THE ROAD BOND AMENDMENT?

The policy of the state in the improvement of roads is now in the hands of the voters. The joint resolution proposing an amendment to the state constitution authorizing the state to issue bonds to the amount of $50,000,000 for the improvement of the highways has now passed at two consecutive sessions of the general assembly. An enabling act has been passed providing for the submission of this resolution to the vote of the people at the next state election, on November 4 of this year. The issue is a vital one, particularly to farmers. The farmers are more dependent upon the roads in their business operations than any other class, and being the heaviest taxpayers, they the also most directly interested in the system adopted for financing road improvement. There should be a full farmer vote on this issue at the next election, and that vote should be based upon an intelligent understanding of all of the practical, economic and political features of the bonding system and their application to conditions at hand. In order to give opportunity for study of such details, and secure opinions on both sides of the question, Pennsylvania Farmer will maintain an open department for the discussion of the bond amendment. Let us have your views and your arguments for or against the amendment. Confine your articles to from 300 to 500 words, if possible, but give us your honest convictions and the reasons for your opinions. You can not afford to act blindly in this matter, and you can not afford to permit your neighbor to do so. Address all communications to Pennsylvania Farmer, 214 S. 12th St., Philadelphia, Pa.

Conservation of Moisture The article on the first page of this issue discusses one of the most important factors in crop production. For many years farmers were content to consider moisture supply as one of the uncontrollable factors. There could be little soil moisture without frequent rainfall, and without rains they considered themselves helpless. Then a few of the more observing students began to study the movement of moisture in the soil, and the causes of rapid evaporation and means of curtailing it. Out of this study has come modern practice as described in this article. The writer has given his own experience, and shows to what extent he has been able to influence a factor which a few years ago was supposed to rest with Providence alone. The same principles, varied only to meet local conditions, are being used on the so-called dry-farming lands, and crops are now produced on areas which a few years ago were a desert waste. With tile drainage to carry off excess moisture in time of heavy rainfall, and proper methods of cultivation, rotation and fertilization to hold moisture in time of drouth, the farmers may now be independent of moisture conditions to a degree never dreamt of a few years ago. They may be, but the large proportion has not yet grasped the importance of the conservation methods at hand. These methods are merely the application of common-sense principles within the reach of every careful, painstaking worker. The importance of controlling moisture as much as possible is shown by the following table, compiled from figures given in the last issue of the Crop Reporter. The table shows the average percentage of total crop damage in the country for the years from 1909 to 1912, due to climatic conditions, all damage being placed at 100 percent:

	Deficient Moisture.	Excessive Moisture.	Heat.	Frost.	Total Climatic
Wheat ...	40.7	7.9	7.7	17.7	80.7
Corn	48.1	15.3	5.7	3.5	82.3
Oats	49.4	13.9	7.6	2.5	81.5
Barley	52.8	8.1	10.1	3.7	84.9
Potatoes ..	47.4	7.4	3.2	3.9	67.6
Hay	65.3	8.4	2.9	7.0	88.6
Tobacco ..	39.5	24.9	0.9	2.2	76.9

It will be noted that with every crop, deficiency in moisture supply is the most damaging. It is most important that we control that factor to the greatest possible degree.

Cause or Effect The warning given by the federal Department of Justice that closing of shops and factories following the enactment of the tariff bill would bring a government investigation has been variously received. There is a more or less general impression that large financial interests which are in position to sustain the loss of a temporary suspension of business have in times past closed their factories and thrown their laborers out of employment simply for political effect. This impression has been strengthened, from time to time, by the premature and often nonsensical threat of some large employer to suspend business operations in case one party or another was successful in a coming election. The threats are easily classed as cheap campaign bombast, and there is ground for the suspicion that the closing of some of the factories after election is for a like purpose. A government investigation and exposure of such cases, if they exist, would be justifiable. The department proposes to ascertain the cause of the closing of shops by an investigation of the exact effect of the tariff changes upon the business of that concern. In this investigation it would consider the cost of production, relative prices, margin of profit, scale of wages, etc., all in comparison with a similar shop or factory operating abroad. In short, it would investigate just the conditions which a permanent tariff commission would be supposed to investigate, with this difference, that it would develop these facts after the offending law was passed and its provisions put into effect, whereas the tariff commission would make its investigations first and base the provisions of the law upon its findings. If it is a department function to go into private enterprises and study the effect of a cause, would it not be more consistent with sound economic government to maintain a department to determine the effect before the cause was enforced?

An Unique Commencement The Sparks Agricultural High School, of Baltimore County, Maryland, has set many new standards for other schools of its kind. Its latest innovation is strikingly characteristic of the Sparks idea in development of efficiency in the practical things of life. Its commencement exercises, held June 21, were a complete departure from the traditional formality of such occasions, and presented a demonstration of the efficiency of its educational work. A dinner cooked on the commencement platform was substituted by the girls for the usual class history or prophesy, and cow milking and scientific handling of milk was substituted by the boys for the usual class poem. Following the invocation, two of the boy graduates put on their white milking suits and gave a practical demonstration in milking and handling of milk. Following the demonstration one of the boys gave an address on "Aesthetic Appreciation of County Life." Later four of the girl graduates had gas ranges placed upon the platform and demonstrated their ability to cook and serve a dinner in 15 minutes. Each girl wore the graduation dress which she herself had made in her sewing classes. The principal of the school, Prof. B. H. Crocheron, closed the exercises with an address on "The Triumph of Efficiency," a most appropriate subject in its connection. This commencement, while far in advance of the rank and file of our industrial schools, is typical of the modern tendency in teaching. It recognizes that fitness for useful service is the first essential to a prosperous and useful citizenship. There is plenty of time ahead of these youthful graduates for Greek, Latin and the fine arts if their conditions and inclinations permit it. Their early training is an ideal foundation for such future study, and it gives them something to work with while preparing for the future.

Unsettled Season The growing season of 1913 has thus far been a succession of disappointments and unpleasant surprises for the farmers of this section. A cold, wet spring, which retarded seeding and interfered with germination of seeds after planting, has been followed by unsettled weather, giving extremes of heat and cold, drouth and rainfall. One county in Pennsylvania reports seven frosts of more or less severity in the month of June, and many sections of the state were visited by heavy killing frosts on the nights of June 9 and 10. The fruits and vegetables that escaped the earlier freezes in May were damaged by the June frosts, and many sections have had these crops practically wiped out. The cold spell of early June was followed by a record-breaking heat wave on June 15 to 18, followed by heavy local rains. The entire season to date has been one of extremes, with sudden changes. The government crop estimates are optimistic and indicate an average condition for the country very little if any below the normal, but this good average is made possible by unusual crop prospects in local areas rather than by uniform conditions over the country. The season is bearing out the prognostications of the weather observers who are studying the relation of weather conditions to "sun spots." It was announced that this season was to be one of frequent sun spots, which would result in frequent changes and extremes of temperature here. The exact relation of such sun spots is so little understood that such prophesies attract but mild interest. The entire study of weather changes and their causes is in the stages of development, and it is by no means certain that the methods now approved are founded upon correct principles or that they take into consideration all of the controlling factors. Our government weather bureau accounts for local disturbances and general conditions by designating points of high or low barometric pressure, etc. It does not attempt to explain the cause of such pressure or predict their future movements. To the lay mind, and apparently to the expert, the weather changes might as logically be credited to spots on the sun or the tilt of the moon as to the cause or origin of pressure areas. The methods now in use enable the observers to foretell conditions fairly accurately for a few hours, but there is still much to learn before these methods can be accepted as scientifically and practically correct.

Knowing Why There is, perhaps, no business in which the manager knows less about the fine points than in the business of farming. This is not a reflection upon the farmer, since there is no business in which the details are so completely veiled behind a mass of fundamental principles. Most farmers know well that if they do certain things, certain other things will probably result. But why they result is generally not considered. Here is a limitation to the great business of farming, generally. How much more progress we could make if we but took the time to observe the whys and wherefores of Nature's plans, and how much more pleasant would be the art of living. When we once discover some of Nature's secrets, an unlimited field is before us, a field greater than in any other line of work. We have the power of producing and improving our crops so that they will become distinctly our own, different from those produced by any other person, and hence of greater market value. If we but know how, we can breed our corn, wheat, oats, clover, vegetables, fruit or any other crop so that they will grow just a little better on our farm than on any other farm, and be different from those grown by our neighbors. But all this requires something more than plowing, planting, cultivating and harvesting. Our neighbors do that. It requires the knowledge of the whys and wherefores of plant development. In Europe, many years ago, a monk studied these hidden truths and later became famous because he learned new things and put them in such form that the farmers of today profit by them. In our own times another man has spent his life in studying Nature's methods, and has given us the Burbank plum and spineless cactus and other new things of certain value. These men were specialists and gave their lives to the innermost secrets of plant growth. We would not want to do this, but we can learn what they and other investigators have found, and we can apply the principles to our own farms. We can, by this knowledge, breed and improve our crops so that they will not only have a higher market value and yield more per acre, but the seed will be of greater value, since it will be better adapted to our farms than any other seed to be obtained. This requires study, and that is where most of us fall short.

A COUNTRY CHURCH MOVEMENT

People are thinking that there is more in the country life movement than was once supposed. Some way the idea has not become so active in our interior communities of the East as it ought to be. It looks as tho the country church must take the initiative in the movement, and if the church is to be successful the work should be done without appearance of selfish or money-making motives.

It seems in most cases that the strictly country church can do but little until there is a movement started somewhere else. The village church is mainly a country church, if it will but admit it. The village church with a rather large proportion of agricultural people can help itself and the community by assisting in the country life regeneration. I have an instance of this sort in mind. It may not be the best method, or rather it may not be the best in all cases, but one must begin somewhere. It matters less where the beginning is made, so long as it is a beginning.

The church in question is situated in the village of Sherburne, N. Y. There are the usual number of churches in the town, or a somewhat larger number than is really needed to accommodate the present church-going public. This church has no monopoly on attendance in that community. It has a pastor who believes that a church should be active and that it should be doing something not only on Sunday but at other times, and among the items of activity he suggested to the men's class of the church and Sunday-school that they take hold of an agricultural lecture course. After a little discussion the plan was approved, and a commitee selected to take charge. It was proposed to make the lectures free at the start, but when the events came off not only were the doors of the church thrown open and the public invited to attend free, but a lunch was thrown in. In most cases the lunch was easily prepared, and in one case it consisted only of apples. The idea was to give something worth while, interest the public and do some good.

Five speakers were selected from the state college of agriculture, as follows: C. H. Luck, of the extension department, his subject being "The Young Farmer." H. H. Wing lectured on animal husbandry; E. O. Fippin, on lime; Professor Rice on poultry; Cavanaugh on chemistry of commercial fertilizers, and Miss Martha Van Rensselaer on domestic science. This was the program as outlined, but I believe some substitutions were made on account of illness or other causes.

Business men of the place took an active interest in the matter, perhaps more so than did the actual farmers who are church attendants. The affair was a success, however, from every point of view, except, of course, that of money making, and that was not contemplated in the plan. It was so much of a success as regards arousing interest and disarming suspicion of ulterior motives, that it is to be tried again. A program is already being formulated, and has advanced far enough to announce that the opening number will be a farmers' institute to be held in the church. There is an opera house in town, but the church is regarded as the proper place for the meeting.

There was some expense connected with the lectures, most of it being the railroad fare from the college and return. In some cases half of this was paid by the state and in others the whole was met by the local committee. A subscription was taken at the start, so it was known where the money was to come from before commencing the course. This is only one phase of the development question, but it is a beginning. Such an affair as this is eminently proper for an interior country church.—H. H. Lyon, Chenango Co., N. Y.

Instructions on Commission Law.—Commissioner Huson has issued a letter of instructions to commission merchants relative to the new law which goes into effect on August 1, after which time it will be illegal for anyone to do a commission business in New York State without a license. Blank application forms and forms for bonds, etc., are furnished each commission dealer, so far as they can be known, and the commissioner announces that individual bondsmen of approved financial standing will be accepted as sureties. On such a bond two sureties are required, and each must justify in the sum of $6,000. The bond of any solvent surety or bonding company in the state will be accepted.

PENNSYLVANIA LEGISLATIVE NEWS

Long Legislative Session.—Indications now favor adjournment on Thursday, June 26, making the longest session in a generation. Only two previous sessions ran beyond June 26. In 1897, owing to destruction of the Capitol by fire, the session ran to July 1, and in 1901, when the legislature deadlocked on election of U. S. Senator, the session closed on June 27. Only an abnormal political condition can account for the length of the session of 1913, with its tremendous expense for printing, compensation for employes paid by the day and supplies. The political upheaval of last fall took away something that successive general assemblies have been accustomed to—leadership, bossism or direction, as you may choose to call it. The result was three factions and sometimes more pulling for advantage on important remedial legislation, a waste of time, passage of unimportant laws and loading down the Journal with speeches for future use. Out of all grew a control of enough men in the last month to put thru or kill certain matters.

Agriculture Does Well.—Agricultural interests have probably fared better than others. Fortunately, there is little ground for the theorist to demand changes except for improvement of conditions which all recognize, and interference by legislation can come only in a few ways. The passage of a compulsory employers' liability act would be one and the ultra conservation of water resources another. The state has been liberal with provisions for agricultural and vocational education, provided the revenue will reach. It is regrettable that narrow-minded people blocked the state fair and licensing of commission merchants, but other things have been done which will tend to help.

The Revenue Situation.—The size of the appropriations made may lead to difficulties because the state revenue has been exceeded by some $25,000,000. This is largely due to open handed dealing with charities and admission of new hospitals. The demands of the charities and educational institutions are at a point that a policy in dealing with them is essential and next year may see regulation.

Live Stock and Milk.—A comprehensive code for dealing with live stock diseases and a milk inspection system are contemplated in bills up for consideration. Both acts were drafted to overcome difficulties under the present law. The live stock laws were inadequate and the state never gave enough money to properly carry them out. The milk inspection opposed local laws and regulations and resulted in disputes which have caused expense to farmers and trouble to those who honestly sought to carry out provisions of public policy.

The County Fairs.—Altho the state fair proposition went down, much was done for county fairs and agricultural exhibitions. An allowance of $100,000 for aid to fairs which are properly conducted is assured, and payments have been systematized. A bill which occupied attention the last week authorizes the Department of Agriculture to make exhibits on behalf of the state thru its bureaus and to have exhibitions, demonstrations and addresses at county fairs, agricultural and industrial exhibitions. This bill carries an appropriation of $20,000.

The Road Bill.—One of the inexplicable things of this session has been the manner in which additional main highway routes were handled. Bills for about 100 additions to the 297 road routes outlined in the Sproul bill were presented. After special committees had weeded them a general bill was prepared and sent to the house. It contained 41 routes. In the senate the 41 were reduced to 37 and 46 more added. This action, if approved, will mean that about 1,200 miles have been added to the 8,000 provided for in the act of 1911, and that some additional millions will be required for their reconstruction. However, it is suspected that the addition of these routes was not so much for the purpose of having them rebuilt, because people on the inside know that the $50,000,000 proposed by the bond issue will never care for those additional routes. They were made state highways so as to get the advantage of the state system of maintenance.

Township Bill Defeated.—The township road bill, modeled by E. E. Jones, Ralph Gibson and other house members, was defeated in the house because it was not understood. The bill provided a system for rural districts. It would have required state approval of work, given authority to state superintendents to halt ill-advised or wasteful work and established a uniform system of bookkeeping. It carries many of the features of the New York laws, and contained some features particularly applicable to Pennsylvania. The bugaboo of state control and the cry of interference with local government defeated the measure. In defeating this bill the members practically knocked out a $2,500,000 appropriation for township road building and maintenance, which was in a companion bill, but which the state administration can hardly be expected to approve when there will be no check on spending the money.

No Cold Storage Law Changes.—The cold storage act of May 16 will stand unless declared unconstitutional. Propositions to change it failed in the house. The new law will become effective on August 16.

After Tree Doctors.—A bill has been introduced which would drive out of business all tree doctors and quacks who leave ruin instead of benefit in their wake. It would make every man or woman who makes a business of treating trees, shrubs or plants for pests take out a state license, to be issued by a board consisting of three persons to be named by the governor, one from the department of agriculture, one from the department of forestry and one from the school of agriculture, who are to be paid expenses only. The license is to cost $25, and no person will be able to obtain it until "The board shall be satisfied, after a proper examination, that the applicant possesses such knowledge and experience as will enable him to treat trees, plants and shrubs in a skillful and efficient manner." Violation of the act is made punishable by a fine of not over $500 or three months in jail for the first offence, and for subsequent offences fines of between $500 and $1,000 and imprisonment for not over a year.

Action on Bills.—Under the law the governor has 30 days in which to act on bills passed within 10 days after adjournment, which will give until the end of July, practically, to dispose of legislation which has kept the legislature busy for six months. —Hamilton, Harrisburg, Pa., June 23.

NEW JERSEY FARM NEWS

State Farm Pays.—The New Jersey State Farm returns annually over $25,000 to the state. It gets its money from sale of produce, seed, roses, broilers and milk. Herein is found endorsement for movements that help the farmer. In no other state enterprise could such a condition be found.

State Wins in Tax Suit.—The state of New Jersey has been saved $1,500,000 by the decision of the Court of Errors and Appeals sustaining the validity of the transfer act of 1909, known as the collateral inheritance act. The law was attacked on the ground that it was unconstitutional and inefficacious for taxing stock in New Jersey corporations held by non-resident decedents.

State Sealer Issues New Rules.—William L. Waldron, head of the state Department of weights and measures, has issued a circular giving the specifications adopted by the national authorities on weights and measures. It is in line with standardization of regulations thruout the different states. New Jersey is one of the first to promulgate these standards.

Beekeepers' Field Meet.—A field meeting of the New Jersey State Beekeepers' Association was recently held at the apiary of George Grover, near Trenton.

Wider Use of Schools.—The board of education of the rural township of Middletown, in Monmouth County, has adopted a resolution looking to a wider use of its new $100,000 high school. It gives the use of the building one night each week for social gatherings. These affairs will be under suitable supervision and parents of children will always be made welcome. Melvin A. Rice, the president of the board, has volunteered to pay all expenses. An excellent musician has been engaged and an instructor for such children as may wish to learn to dance. During the winter, the school house will be open every evening for public meetings of the citizens, entertainments of various kinds, lectures, social gatherings, etc.

Top-dressed Grass.—Those farmers who took the advice of the Mercer County Farm Bureau and top-dressed their two-year-old grass sods with about 300 pounds of a 7-7-5 fertilizer are away ahead. An acre or a strip was left unfertilized as a check. The top-dressed acres promise about twice the yield. The idea of the bureau was soil improvement. It figured that one of the first needs of the soil was humus, and one of the best ways to secure it was to plow under a good sod. If this could be done and yet yield a profit it would be something worth while. Such fertilization is very different from the old method with nitrate of soda alone, which, altho cheaper, left the ground poorer in phosphoric acid and potash than if no nitrate had been applied.

Rye.—Many hitherto practically worthless sand fields will this year yield tremendous crops of rye. Cowpeas were planted last year and turned under, and a special high-grade commercial fertilizer put in with the seed rye. Some vetch was sowed with the rye.

Potatoes.—The outlook for a big potato crop was very poor a few weeks ago, but due to favorable weather conditions it now seems likely that there will be a fair yield.

Asparagus.—Asparagus growers have had a good season, altho it was somewhat irregular. Warm weather in May produced lots of "grass" with the consequent low prices. Cool weather in June lessened the supply, but the price went up to $3 per dozen. Again this year, the Giant Argenteuil, or French, has proven itself the best blight resistant variety.

Gooseberries.—Gooseberries are proving to be one of the most profitable crops raised. Josiah Robbins, of Monmouth County, has over 10 acres set to this fruit. The harvest will be about 12 tons, for which he is receiving $100 per ton, or $2.50 a bushel. The pickers are paid 50 cents a bushel, and some men have made as high as $6 per day, while children make from $2 per day upwards. The berries are shipped to Baltimore. The acid in the gooseberries furnishes a cheap fruit acid, which is largely used at soda fountains. According to the pure food laws, these acids must be fruit acids, and the gooseberry seems to supply the demand in an economical way.

Cranberries.—Reports received from owners of cranberry bogs indicate that the prospective cranberry crop was seriously damaged during the recent cold weather. At present the loss can not be accurately determined, but the damage on some bogs is said to be large.—D. T. H.

NEW YORK LETTER

Muck Cropping.—Muck lands in Cayuga County are being turned into profit-producing acres. Near Port Byron 300 acres of such land has recently been sold to be developed. It represents the consolidation of seven farms, and when fully developed will be worth $50,000. This year 25 acres of celery, 10 each of onions and lettuce will be grown.

Co-operative Association Law.—A conference was held at Commissioner Huson's office this week to consider the new law relative to supervision of co-operative associations. The sentiment of the meeting was that there should be a federation of co-operative associations thru the agricultural department. A tentitive plan was discussed for the securing of the necessary terminal facilities in New York City and the districting of the city into retail distributing centers. The work will be conducted at present thru the agricultural department.

Farm Bureau.—Another farm bureau has just been organized in Dutchess County. F. H. Lacey, of Millbrook, will be county agent.

Experimental Hop Farm.—The directors of the New York State Experiment Station have leased the farm of Patrick King, near Cooperstown, for an experimental hop farm, in pursuance of the provisions of the bill recently passed by the legislature and signed by the governor, appropriating $5,000 for the establishment of such a farm.

Primary Legislation.—The legislature is sitting in a special session to consider Governor Sulzer's primary bills. There is fierce opposition to them on the part of the Tammany democrats and Tammany republicans. The governor will hardly pull thru the legislation he desires. The republicans have put in several bills relating to primary elections. It looks now as if the governor's bill will be defeated, that the Hinman bill (which is quite similar to the governor's, except that it does not eliminate the state convention) would pass, and then the question arises, will the governor sign it? The writer thinks he will, on the theory that part of a loaf is better than none.

Costly Fires.—Judge Roesch, assistant fire marshal of the state, speaking recently on "Fire Prevention on Farms," advocated the organization of fire prevention clubs in rural districts in furtherance of the state campaign of fire education which is being pushed to prevent great waste from fire. He said that last year there were 12,835 fires in the state, entailing a total loss of $12,850,934. Of these, he said, 4,317 were of dwellings, 984 of barns, 377 of factories and 239 of hotels. Lightning caused 306, locomotive sparks 152, and hot ashes 119.

A Good Work.—Lectures in 75 cities, towns and villages of New York State to more than 72,500 pupils in the public schools upon the necessity for care of the teeth, have been delivered by Dr. A. W. White, under the direction of the state commissioner of health. —New Yorker.

MARYLAND NOTES

Strawberries.—The strawberry season in Wicomico and Somerset counties closed last week, and while the crop was short, prices averaged high the entire season. Pittsville shipped the most berries from Wicomico county, sending out 250 refrigerator carloads, realizing from $1,000 to $1,500 each. Marion Station led in Somerset, with 400 refrigerator carloads, which averaged about $1,150 per car. This was 50 cars short of the output last season. At Ridgely there was only 10,075 crates shipped, which was 2,325 less than last season. It is here that the Armour & Co. preserve factory buys strawberries. Gooseberries are now being delivered at the factory, and the crop is proving to be a good money maker.

Poultry.—The Baltimore show has aroused the interest in poultry raising thruout the state. Many poultry associations were organized last year and new ones are now being formed. Mt. Airy will hold a show Thanksgiving week. Last week at Chestertown a permanent poultry association was organized to represent Kent and Queen Annes counties.

Grass Crop Short.—Farmers thruout the state are complaining that the grass crop is short and it will be a poor hay season, contrary to estimates made early in the season. It is also said that rust has attacked the wheat crop.

Fair Association.—An agricultural association has just been formed at Leonardstown, to be known as the St. Mary's Fair Association. A fair will be held in October, at Leonard Hall school. The proceeds will be used for building up the agricultural department of the school.

College Commencement.—The commencement exercises of the Maryland Agricultural College last week was held on the campus. Beside the usual degrees conferred on the graduates, many others were honored. Among them Congressman D. J. Lewis was made Doctor of Laws, in recognition of his successful "efforts to lighten the burdens of the people of the land by securing for them the system of parcel post." In his acknowledgment he said to the graduates that the proper development of character was as important as education. Honorary certificates for proficiency were awarded to Mr. George O. Brown, of Baltimore, Mr. W. Oscar Collier, of Easton, Md., and to Mr. Richard Vincent, Jr., White Marsh, Md.—G. O. B.

COUNTY NOTES

Huntingdon Co., Pa. (C.), June 17.—Weather fair, nights cool, little rain. Live stock is scarce; prices high; premiums on butcher stock. Pastures good. Corn and oats growing well. Wheat promises to be a bumper crop. Fruit badly damaged by frost. Cherries and apples will be almost a failure. Wheat selling at $1; corn, 70c; oats, 50c; cattle, 12½@13½c; butter, 20c; eggs, 21c. Growth of crops retarted by cool weather. Farm labor scarce.—Clair L. Harnish.

Erie Co., Pa. (N. W.), June 16.—Very warm at present; the past month has been cold and warm, alternately. Not much dealing in live stock at present; prices are good. All cattle are doing well in the pasture. Corn and potatoes were damaged some by frosts, but are reviving nicely. Hay is lighter than usual. Planting is practically all done; most crops are up. The farmers are plowing for buckwheat.—L. Howard Merton.

McKean Co., Pa. (N. C.), June 17.—Very warm at present. This month will be remembered in this locality as the month of 7 frosts. Beef is very high. A good young carcass of 400 to 500 pounds is worth $50 on foot. Crops have been kept back by cold and frost. Eggs are 25@27c per doz.; butter, creamery, 32@35c lb. The ground is dry and hot just now. Rain is needed. Some are replanting corn killed by frost. Garden plants are being reset. Late planting best.—M. Ingalsby.

Fayette Co., Pa. (S. W.), June 23.—Frequent rains after two weeks of very hot, dry weather. Crops are growing fine. Meadows very light on account of injury by frosts. All fruits practically a total failure in this section. Beef cattle high, 7¼c; horses, $175@250; hogs scarce; eggs, 22c; butter, 35c. The late rains are putting farmers back in working corn and potatoes. Some alfalfa has been cut.—Samuel A. Harris.

The Daughter of David Kerr

By HARRY KING TOOTLE.

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CHAPTER XXI

The one person who could have told how Joe Wright had come to visit Mike Noonan's lodging house was David Kerr. He had sprung the trap himself, never dreaming that his own daughter would be caught in it. When the fight on the Interurban Railway had first started, at command of the boss, Jack Durken, a ward heeler, apparently had gone over to the enemy.

The man had found employment in the circulation department of the News, and soon afterward the information reached Wright that one of his own employes was a former henchman of the notorious first ward leader, Mike Noonan. Durken was loud in his denunciations of David Kerr and his followers, and appeared willing to betray whatever he knew of the methods of the gang.

The editor found him a fountain of information regarding the shady politics of Belmont. In reality Durken told only what David Kerr ordered him to tell. Wishing to establish Wright's confidence in the man, Kerr had him disclose many things of slight importance that were absolutely authentic.

One of the charges continuously brought against the machine was that it was colonizing floaters in lodging houses in the low, thickly-populated river wards. Durken even admitted it when Wright asked about it, and several days later suggested a tour of inspection. The blood of the star reporter warmed in the editor's veins. The idea was tantalizing. It was one of those stories a good man would sacrifice half a year's salary to handle.

Without saying anything to anyone, the owner of the News thought of the expedition for several days. The more he thought of it, the more it appealed to him. The more it appealed to him the less was the likelihood of his considering the axiom that in a battle it is the general's duty not to get hurt. In fact, the thought of physical injury did not occur to him. He was a stranger in Belmont, no one knew him, and in the daytime there was no danger.

When Wright finally decided to investigate personally it was only a few days before the election. He determined that he would wander down into the first ward two days before the votes were cast to gather material for his story. The next afternoon, just on the eve of election, his final attack on the machine would be an expose of ring methods of handling vagabond voters imported for the occasion.

The program was being carried out as originally planned, notwithstanding the break with Gloria the previous day, when Wright was induced to go thru Noonan's ''hotel.'' Here, deserted by Durken, who had been his guide, he had fallen into the hands of Turkey Ryan and Buck Kelly.

Altho dazed by the unexpectedness of the attack, he had nevertheless managed to give a good account of himself. The cramped attic quarters in which they had fought had been in his favor. The two bruisers had been surprised by what a scientific boxer could do in a rough-and-tumble fight. To the momentary indecision resulting from his good defense Wright owed his escape from the room in which he had been trapped.

A stinging blow having taken all the fight out of Kelly, he lurched and fell forward against the door just as the newspaper man had managed to elude his assailants for the instant and slip out of the roon. Forced to minister to his companion, Turkey Ryan had lost many valuable seconds before he could take up the pursuit. It was during this respite that Wright, groping blindly for the stair, had tripped and fallen, to be found unconscious by Gloria in front of Little Ella's door.

No one ever knew exactly what had taken place in Noonan's lodging house that afternoon in early spring. Returning from the mission with Dr. Norton, Mrs. Hayes was surprised to find the door of the Windermere woman's room fastened from within. When no response greeted her knock, surprise gave way to alarm, and she called upon Dr. Norton to aid her in opening the door. Gloria had not fastened it as securely as she had thought, and it required no great strength on the part of the physician to force it open.

Gloria was removed to Mrs. Hayes's home in a carriage as soon as she was revived. Little Ella, in a semi-conscious state, was hurried to the city hospital in a police ambulance. An examination having shown that Wright had sustained no serious injury, as soon as he had regained consciousness he was taken to his own apartment.

David Kerr was not allowed to see his daughter. Altho the exact nature of the shock to which she had been subjected was not known, since both Kelly and Ryan had disappeared, yet the physicians did not think it best in her nervous condition for her to see even her father. The following day she remained in bed, speaking never a word, busy with her own thoughts. The next day, that of the election, she dressed, but did not leave her room.

When it was seen that Gloria was under the cloud of a settled melancholy, there was a debate how best to minister to her. Her very silence made the problem more perplexing. She uttered never a word by which they might pluck out the heart of the mystery. Strange as it may seem, she did not even ask about Joe Wright. She did, however, read the morning and the afternoon papers carefully. In neither was there any reference to an attack on the editor. As her mind beat upon the bars of its new iron cage, it sufficed her to know that all must be well with him.

Joe Wright's injuries were not of a serious nature, yet it was thought best that he remain at home for several days. By means of the telephone and thru the men who came to the house he edited the News the day previous to election. Over the same telephone line came the cheering news the next night that the democrats had been defeated. David Kerr's rule had been broken.

Nothing of a personal nature had been allowed to help contribute to this success. No mention had been made in the News of the assault on its editor in Mike Noonan's lodging house, because to Wright it had appeared as a personal matter. The day previous Gloria had denounced him and cried aloud for vengeance. He recognized that had Gloria not been mixed up in the affair the result might have been the same, but the personal element was what made him hold his peace.

The news that the day had been carried for good government was only a temporary intoxicant. There were a few moments of exhilaration when his real feelings were submerged in the general rejoicing that David Kerr had been given a more severe set-back than he had ever before received. Then came the ebb tide, leaving him on the desolate shore of disheartening uncertainty. The past was a nightmare and the future a blank.

The tumult and the cheers had died away, the brass bands at last were stilled, his sitting-room with two windows on the street and its own private entrance had been cleared of tobacco smoke, and the reception he had held when it was learned the election had gone his way was at an end, when Joe Wright sat himself down alone in the quiet of the first hours of the morning to take stock of his future.

Gloria? What of her?

It was always Gloria, Gloria, Gloria, running thru his mind, knocking at the door of his heart.

Always of the Gloria who had spurned him, he thought, for he knew nothing of the part she had played in the lodging house. It was not a situation to contemplate with equanimity—this living in the same town with the woman he loved madly. Were Belmont of some size, a city like St. Louis or Pittsburgh, there would be the probability that their paths would seldom cross. Yet in Belmont everyone knew everyone else and never a week passed but what they all met at least in passing.

It would be impossible for him to avoid Gloria altogether. He was frank enough to acknowledge to himself that he would undoubtedly seek those places where there would be some certainty of his meeting her. To be in the same town with her meant that he could not give her up. Yet he knew that any overtures he might make would be worse than useless. He felt that her prejudice was such that there could never be established that bond without which matrimony is unholy. The ruffled pool may again be calm, the misted mirror may again be clear, yet he believed in her ignorance she would feel that when two hearts but once have broken troth there is no alchemy that love distills can make the past to live again and the dead present as tho it had not been.

The harder he tried to fight against his conviction of what he should do, the more Wright was convinced that there was but one course for him to pursue: it would be best for him to leave Belmont. This would not be for a week or a month, but for all time. It would be necessary for him to dispose of the paper, but this he could do thru a broker. He was quite willing to let it go at a sacrifice, to lose what he had himself put into it, so anxious was he to escape from Belmont in search of that magical flower, heart's-ease.

Having made up his mind, Wright went to bed, but not to sleep. The few remaining hours of darkness he rolled and tossed. It was not the bruises he had received in the fight at Noonan's that kept him awake, annoying as they were. It was always the one thought—Gloria, Gloria, Gloria.

Morning brought diversions which slightly relieved the tension. There were two editorials to be written upon the political situation. This was followed by conferences with men on the paper, and then came the letter to the newspaper broker announcing that the News was for sale. He did not dictate this to his secretary, but wrote it out laboriously in long-hand.

The morning was more than half over when he began to pack. It was Wright's intention to leave Belmont that night, ostensibly on a vacation for the purpose of recuperation after the hard campaign. The owner of the News felt, however, that he would never return.

The many steps necessitated in packing taught him how weak he was, and after lunch he called in Patty, the little daughter of his landlady, to help him. They had always been the best of friends, and her sorrow when she learned he was going away on a long vacation was genuine. The child was of much assistance, bringing all the smaller things from the living room into the bedroom where the real work of packing was being done.

When the packing was about completed the little girl remembered that she had brought a doll with her. In searching for it in a pile of clothing beside Wright's trunk she felt something hard. To satisfy her curiosity she drew it forth, to discover, instead of her doll, that it was a framed picture of a young woman. It was a picture of Gloria which had appeared in a weekly society paper.

Patty had helped wrap the framed pictures in old newspapers, and as she brought Gloria's picture, she exclaimed triumphantly, ''Here's another picture, Mr. Joey.''

Wright had put it aside surreptitiously when packing the things he had planned to take with him for immediate use. For the fraction of a minute there had been a debate in his mind to whether or not he would be weak enough to carry her picture with him. He had finally placed it under a pile of clothing beside his steamer trunk.

''It's extremely good of you to find that picture,'' the man remarked with the gravity he sometimes assumed in treating Patty as one of equal years and understanding; ''I doubt if I should have found it.''

''I was hunting for my 'dolly, and looked under a pile of things and found the pretty picture lady.'' She gazed at the picture of Gloria admiringly.

''Really, Patty, you astonish me! Your perspicacity is exceeded only by your perseverance. I don't think I should ever have found that picture. Just leave it on the table there, and don't—if you love me—lose your dolly any more, please; at least not until all my things are securely packed.''

Patty was just on the point of asking the name of the young woman who had so taken her fancy, when the doorbell rang. With the announcement that no one was at home and she had to answer the bell, she scampered off.

Wright picked up the picture and gazed at it intently. He was sacrificing all for her. Was the sacrifice worth while? The question would have been an idle one. He loved her, had never loved anyone else and never would love anyone else. No sacrifice was too great which would mean any increased happiness for her. The sound of some one being brought to his rooms by Patty caused him to put the picture hastily downward on the table. The door opened to admit Dr. Hayes.

''Good afternoon, Mr. Wright,'' he exclaimed cordially as he came forward with hand outstretched. ''I hope you'll let a democrat drop in to congratulate you on winning the election.''

The editor's face lit up with pleasure as they clasped hands.

''Thank you, old man. It's awfully good of you to stop by before I started on a little vacation. The News won its fight; but of course we can't expect this to be the end of the cortest, can we?''

The coroner shook his head dolefully.

''Don't ask me. I've ceased to be a political prophet. 'Do you think it'll be a boy, doc?' they ask. 'I don't know,' says I, shaking my head solemnlike. I'm going to get that wise about politics. I don't prophesy anything now until after it happens. But I never thought I'd live to see the day that Belmont would go republican. I'm out of politics.''

Wright smiled. ''Isn't that what they all say—the day after?''

''It's the truth this time. My wife had done nothing but read the riot act to me for the last two days.''

''I imagine Mrs. Hayes is a purist in politics.''

''Well, I can't blame her,'' the doctor admitted. ''She's been poking around down in the river wards, and that surely was a raw frame-up they handed you. She got on to it, and she's dead sore.''

Wright had discussed the affair with Dr. Norton and had also told Arthur Morrison what little he knew. This was the first intimation coming from the ring that they even knew of the occurrence. The newspaper man was curious to know the ring version of it. Dr. Hayes's remark afforded him the opportunity to approach the matter cautiously.

''What was Mrs. Hayes's connection with that—ah—little episode?'' he asked. ''I gathered from Dr. Norton that in some way or other she knew something about it.''

Dr. Hayes stared at him in amazement. Miss Kerr had never uttered a word, yet he readily believed, as did the others, that both Wright and she were the only ones who could tell the story. The woman in whose room they had been found was still in a delirious condition at the city hospital and nothing could be learned from her. Altho Kerr had ordered the police to bring in Ryan and Kelly, the search had been unsuccessful.

''What!'' gasped Dr. Hayes, ''don't you know how you got out of that mess and why the thugs didn't finish you?''

Wright shook his head. His visitor's manner puzzled him.

''I don't know a thing. I think someone helped me in some way or other, but Dr. Norton claimed he knew nothing.''

''Well, I'll be demmed!''

''Don't; there's no occasion for it now—you're out of politics. The first thing I knew was when I heard Dr. Norton say, 'He's coming to, all right.' ''

Soon Hayes picked up his hat to go. He stood for an instant, as if inviting Wright to speak. As he did so, the visitor asked, thinking of Gloria the while:

''Is there anything you want to know, now that you're going on a vacation, or would you like me to deliver any—messages?''

''No, none.'' Then after a pause, ''It is better so.''

''Well, I'm off,'' remarked the doctor. He spoke carelessly, to hide his regret, for at heart he keenly sympathized with the man who was making so strong a fight for a principle that love itself had to give way before it. Then he added, apparently as an afterthought, ''By the way, I believe that offer for your paper still holds good.''

Wright laughed, the little world-weary laugh he had sometimes permitted himself since he and Gloria had parted in Judge Gilbert's office.

''My vacation has started,'' he answered, ''and I'm not talking business. But you can tell Judge Gilbert for me that the Belmont News is not on the market for his clients.''

''All right, I'll tell him,'' Hayes replied as they shook hands. ''Here's good luck to you on your vacation.''

Wright smiled grimly, the thought that good luck would perch upon his standard was a sorry hope. He refused to blind himself to the truth with any fleeting consolation such as that.

CHAPTER XXII

The morning after the election, Gloria called for the Banner as soon as she wakened. The headlines told her at once that her father had been defeated. She searched carefully thru the paper for some reference to Joe Wright, but no mention was made of him. Naturally enough, the Banner was not in a jubilant mood. It predicted dire things in store for Belmont, but Gloria, remembering what she had learned at so bitter a cost, felt that any change must be for the better.

The girl had now recovered from the first severity of the shock, and was anxious to know for a certainty what had become of Wright. She knew that he lived and was not seriously injured, else there would have been some mention of him in the paper. The day previous she had thought much of him, but there had been much else to think of. Now with a return to what was to be the normal, she wanted to know how he fared.

All the morning Gloria spent in revolving in her mind just what she ought to do. She knew that her father meant Wright harm. Pride and maidenly reserve wrestled with what she considered her duty. Her conscience told her that before she left Belmont forever she should warn this man who once had loved her. He must be placed on his guard against her own father. It cut her like a knife to think that the attack on the editor had really been made at her command. Now she could do no less than tell him how affairs stood.

Dr. Hayes could scarcely conceal his surprise when Gloria followed him into the hall after luncheon and asked him about Mr. Wright's condition. He told her that he still kept to his room, but was reported as improving. Before he could frame a question, Gloria thanked him and fled up the stairs. About three o'clock she emerged from her room, dressed for the street, and announced to Mrs. Hayes that she was going for a short walk alone.

What the daughter of David Kerr told her hostess was the truth. She did go for a short walk, a walk that took her in the most direct way to the house where Joe Wright resided. The door was opened for her by a little girl who invited her to enter.

''I wish to see Mr. Wright,'' Gloria explained to the child.

''I'll take you to his sitting-room. He told me to bring anybody in that came to see him, and tell 'em he'd be back in a minute.''

All was silence in the room when the little girl threw wide the door and bade her enter.

''Then he's not in the house, you say?''

''No, he's gone to get a baggageman, but he said to wait,'' Patty insisted.

''Whom did he wish to wait?''

''Oh, anybody. He said somebody's coming to pack his books. He hurt himself and can't bend over the box.''

''Oh!'' cried Gloria, with a little gasp of pain. She remembered all too well the hurt of which he complained. Then at the same time came a new thought, why was he packing his books? A more critical look showed her many evidences that he was giving up his apartment. She could not understand.

''Is Mr. Wright moving everything?'' she ventured.

''Yes, he's going away.''

Gloria gazed at the child in surprise, not quite grasping what she said. A smothered exclamation caused her to look up quickly. There, staring at her from the doorway in honest amazement, stood Joe Wright. She felt her cheeks crimson.

''Miss Kerr! You here!'' he gasped, before he could master his surprise. Then in an instant he went on in an even, conversational tone, ''I beg your pardon, I scarcely expected to find you here.''

''No, I—I—I—scarcely expected to find myself here, but here I am.'' As she said this she extended her hands, then dropped them, a gesture which seemed to typify the simplicity with which the visit had been accomplished.

Wright readily recognized that there was some motive in the call, and dismissed Patty with instructions to let him know if anyone asked for him.

''Won't you sit down?'' he begged, remembering his duty as host.

''Thank you, I haven't a moment to stay.''

Wright looked about for a chair, to find them filled with odds and ends of things intended to be packed. The girl insisted that she preferred to stand, and listened to his apology for the appearance of the room and the explanation that he was moving.

''I learned at luncheon you were going away,'' she acknowledged. ''Since you would not come to see me, I had to come to see you.''

Again his amazement equaled that the sight of her in his living room had occasioned. He permitted it to betray itself by exclaiming:

''Since I wouldn't come to see you! Surely, Miss Kerr, you didn't expect that? There was nothing whatever equivocal about my dismissal.''

This was something she had not planned, a reference to the past. She wished merely to warn him and then take leave of him forever.

''I didn't come with a desire to refer to that,'' she answered. ''You must realize that what I have to say seems to me of the utmost importance, else I —oh, you can't know the effort it has cost me to come here.''

''I'm sorry if your dislike is so intense.''

She shook her head, with a smile that was only a sad lighting up of her countenance, like the last flare of an expiring flame.

''Let us not speak of like or dislike. All that is past. It is true I promised myself never to see you again, but since that day in Judge Gilbert's office events have shed such a new light on Belmont and on me that I feel some explanations are due you before you go away.''

Quick as a flash he saw that she had learned the truth, or at least some part of it. With his characteristic generosity he wished to relieve her of the necessity of making explanations. They would lead nowhere and only cause her pain.

''I appreciate your coming, Miss Kerr, from the bottom of my heart I do, but if—if anything you think you have to tell causes you pain, I'd rather far that what you wish to say should remain unspoken.''

''That's generous of you, but I should find it harder to maintain silence—because I want to be just.''

''Miss Kerr! There is no occasion for you to——''

''Please, please, don't interrupt me. It's hard enough as it is.'' A chair he had brought for Gloria she had refused, and now he sank into it himself, his head resting in his hands as he listened. ''I have lived away from Belmont,'' she went on in an even, repressed monotone that cut him to the heart, ''since I was a little girl, too young to understand, and I was brought up to believe that my father was—well, just the opposite of what he is. It was all a mistake, of course. It was no fault of mine, but I must suffer for it just the same. I had everything money could buy; and then you came—and—and I had love.''

Her voice trembled for the instant. Wright could not stand it.

''Gloria!'' he cried, seeking to stop her, but she went on again in the same impersonal manner, apparently unheeding his gesture for her to desist as much as she did the cry of pain that burst from his lips.

''But no one was really kind to me. I lived in a fool's Paradise. I did not know the truth.'' Then vehemently, losing control of herself. ''Oh, why did you ever speak to me of love! You, of all men, to make my humiliation doubly great.''

Her manner of speaking showed how much she had suffered since she had learned the truth, how intense her unhappiness would continue to be.

''Don't speak so, I beg of you,'' Wright commanded. ''Can you believe that I have not suffered?''

She choose to ignore his question.

''Oh, if I had never come home. If I had even not gone to Judge Gilbert's office that day! It was fate, Joe, it was fate. I can see it all now. We boast that we dominate circumstances, the god's laugh and are our masters still. Looking back the way we've come from that first night I met you here I can see that every step, relentless as death, was leading to that day when I learned the truth about my father.''

''And you know?''

''Everything. That's why I'm here. It was really such a little time ago that I came back to Belmont, yet it seems ages. Oh, why didn't you go away! You must have seen how it had to end. Since I came home and first met you, I've lived and suffered and grown old. And I had dreamed such dreams!'' Here she paused, as if to fight back the painful memories of those rainbow dreams. Then she admitted them. ''And they became rosier and rosier—because of you. Even the disappointments my father's lack of polish caused me were nothing—because of you. Then you ceased to see me, and I didn't understand.

''I wanted you so very much—then—and you did not come. I know now what it was; the election was coming on, and you had begun to fight my father. You knew I didn't realize his position in Belmont. I'm sincere. I want you to know I understand how hard it was for you, my friend—because—I believe you loved me—sincerely.''

''Sincerely, Gloria.'' His reply was almost a sob. ''You know I begged you to go away. I would have followed you, and you would never have known.''

His last sentence was full of bitterness, an acknowledgment of the Never-Never Land whither all happiness had flown. A wan smile was her acknowledgment of this.

''That's true, but the gods laugh and are our masters still. I felt that I owed it to my father to remain with him in Belmont. Then came the day in Judge Gilbert's office. Did ever a girl have a courtship crowded into half an hour? So short a time there was between those few words of love and the rude awakening which followed that there remains to me now not even a sweet memory of that avowal which all girls cherish so. And then—well, that's why I've come today. I couldn't let you go away without asking you to forgive me for what I said in Judge Gilbert's office.''

''There's no need of speaking of forgiveness. Please do not say any more.''

(To be continued.)

''Has his family got a skeleton in its closet?''

''I don't know about what they've got in the closet, but they've got one in a hobble-skirt.''

Saddlee—A man can hardly wed now unless he can show the girl two licenses.

Denston—Two licenses?

Saddlee—Yes—marriage and automobile.—Boston Post.

Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., June 23, 1913.

Much of the butter receipts was defective from the heat and choice stock was moderate and firm. The market advanced a shade on these grades. There was a good demand for fresh eggs free from heat defects. Other grades are not wanted. Dressed poultry was firm and in good demand. Vegetables were dull and slow.

Butter.—Western creamery, 31c; extras, 28½@29c; firsts to seconds, 26@27½c; special prints, 35@38c; near-by prints, 32c.

Cheese.—New York full cream, 17@17¼c; skims, 8¾@11c, according to quality.

Eggs.—Candled, 24@26c doz.; extras, 22c. Current receipts at $5.40 per standard case.

Poultry.—Fowls, 18@19c; old roosters, 12c; spring chickens, 26@28c; ducks, 13@14c; pigeons, 23@25c.

Dressed Poultry.—Western fowls, 18@19c; roosters, 13½c; chickens, 18@19c; squabs, $3.50@4.50 doz.

Vegetables.—White potatoes, choice, 35@40c bu. Onions, $1.10@1.15 bag. Cabbage, $1.75@2.50 crate. Lettuce, $1.25@2.00 basket. Cucumbers, $1.50@2.00 basket. Celery, 40c@$1.00 bch. Spinach, $1.25@2.00 bbl. Kale, 25@50c bbl. Egg plant, $1.00@1.50 box. String beans, 40@50c bushel. Peas, $1.50@2.00 basket. Peppers, $1.50@2.00 carrier. Tomatoes, $1.00@1.50 carrier. Watercress, $1.00@1.50 100 bchs. Asparagus, 6@15c bch. Beets, $2.00@3.00 per 100 bchs.

Fruit.—Apples, choice varieties, 25@75c hamper; $3.00@5.00 bbl. Strawberries, 5@10c qt. Blackberries, 8@15c qt. Cherries, 8@15c lb. Gooseberries, 5@7c.

Hay and Grain.—No. 1 timothy, new, $16.50@17.00; No. 2, $14.00@15.00; No. 3 do, $11.00@12.00. No grade, $8.00@9.00. Clover mixed, No. 1, $12.50@13.00; No. 2 do., $10.50@11.50. No. 1 tangled rye straw, $16.00@16.50; No. 1 wheat straw, $.900@9.50; No. 1 oat straw, $10.00@10.50. New shelled corn, No. 2 yellow, 70½@71c; No. 3 yellow, 69@69½c. Winter milling wheat, $1.02@1.04; No. 1 northern, $1.02½@1.03½. No. 2 white oats, 48@48½c. Standard white, 47@47½c; No. 3 white, 46@46½c.

Hides and Skins.—Steers, abattoir, 15@16c; do. country, 13½@14c. Cows, abattoir, 14@14½c; do. country, 12½c. Bulls, abattoir, 12¾c; do. country, 11¼c. Calf skins, Nos. 5 to 12 and up, $1.35@2.45; do. green, 13@14c.

Seeds.—Timothy, $2.65 bu.; clover, white, $25; do. crimson, $5.00; do. mammoth, $15.25; do. sweet, $13.00; do. alsike, $14.75; red top, per bu., $15.00; alfalfa, $7.00@10.00; Canada field peas, $2.75; vetch, $6.25; rye, winter, $1.50; spring, $2.00; soy beans, $2.50; barley, $2.50; buckwheat, $1.50; cowpeas, $3.00@3.25; millet, $1.50; oats, $1.20.

Coffee.—Rio, 7s, 9⅝c; Santos, 4s, 11¾c. Mild Coffee—Cordova, 13@16½c.

Provisions.—City beef, smoked, and air-dried, 25@26c. Beef hams, 34@35c. Pork, family, $22.00@23.00 bbl. Hams, cured, 15@16c; skinned, 15⅞@16⅝c; smoked, 18@21c. Other hams, smoked, city cured as to brand, 18@20c. Picnic shoulders, 10⅞@11⅝c; do. smoked, 13@13½c. Bellies in pickle, 15½@17½c. Breakfast bacon as to quality, 20@25c. Lard, refined, 11¾@12½c; do. in tubs, 11¾@12½c; do. kettle-rendered, 11¾@12c. Tallow, prime city, 6½@6⅝c; do. country, 6⅝c; do. dark, 5½c; do. cakes, 7c.

Sugar.—Cut loaf, $5.15 cwt.; cubes, $4.60; powdered, $4.45; granulated, $4.35; standard granulated, $4.40; crystal A, $4.35.

Flour.—For 196 lbs., in wood, winter clear, new, $4.15@4.40; do. straight, new, $4.50@4.65; favorite brands, $5.25@5.60. Rye flour, Penna., $3.50@3.75.

NEW YORK PRODUCE

New York City, June 23, 1913.

The butter market was dull under reduced buying and all grades declined ¼c. Eggs are quiet. The choicest stock is readily sold, but that showing heat defects is hard to sell to advantage. Dressed poultry is in excess of the demand and the market is slow and weak. Vegetables are about as last week.

Butter.—Creamery firsts to extras, 26½@27¾c; thirds to seconds, 24@26¼c; factory, 22@24c; state dairy, 24@27c; packing stock, 20@22c; process, 24½@25½c.

Cheese.—Whole milk, specials, 13@14¾c; do. common to fancy, 12@14½c; skims, 5@10c.

Eggs.—State and near-by, 23@26c; fresh gathered, 15@24c; mixed, 19@24c.

Dressed Poultry.—Turkeys, dry, 18@19c; chickens, Penna., 26@30c; fowls, 14@18½c; old roosters, 12½c; ducks, 15@20c; roasters, 19@22c.

Live Poultry.—Fowls, 18c; chickens, 18c; old roosters, 12½c.

Grain.—Easy. Wheat, No. 2 red, nominal. No. 1 Northern, $1.01¾. Corn, 67¾c. Oats, standard white, 46½@47c.

Vegetables.—Potatoes, new, $1.25@1.87 per bbl. Cabbage, $1.50@2.25 crate. Green beans, 50c@$1.25 basket. Carrots, 75c@$1.50 bag. Cucumbers, 30@75c doz. Lettuce, $1.00@1.75 bbl. Squash, 50@75c basket. Horseradish, $1.00@3.00 cwt. Parsnips, 50@75c bbl. Turnips, 75c@$1.25. Watercress, $1.00@1.50 per 100 bunches.

Fruit.—Apples, $1.75@4.00 bbl., according to variety. Strawberries, 7@20c qt. Peaches, $1.75@3.00 carrier. Cherries, 12@18c lb. Blackberries, 5@15c qt. Raspberries, 5@8c qt. Huckleberries, 16@20c qt. Gooseberries, 7@15c qt.

BALTIMORE PRODUCE

Baltimore, Md., June 23, 1913.

Under an equal supply and demand, butter prices remained steady thruout the week. The egg market ruled steady on stock free from heat defects. Poorer grades were hard to sell. Live poultry was dull and slow at barely steady prices. Not much change is found in vegetables.

Butter.—Creamery, fancy, 31c; do., choice, 28@29c; prints and blocks, 29@31c; Maryland and Penna. rolls, 22c; prints, 30@31c. Process, 25@27c.

Cheese.—Flat, 17½c; Daisy, 18@18½c.

Eggs.—Md. and Penna., firsts, 19c; western, 19c; southern, 18c.

Live Poultry.—Hens, 17c; chickens, 17½@18c; old roosters, 11c. Ducks, 13@15c. Geese, 14@15c. Guinea fowls, 20@30c.

Dressed Poultry.—Turkeys, 24@25c; chickens, 20@21c; roosters, 11@12c; ducks, 20@22c; geese, 11@17c.

Vegetables.—Potatoes, white, 30@35c bu. Sweets, $3.00@4.00 bbl. Cabbage, $1.50@2.00 crate. Onions, 75@85c bas. Lettuce, 50c@$1.00 bu. Egg plant, $1.25@2.25 crate. Peppers, $1.50@2.00 crate. Squash, 50c@$1.00 crate. Spinach, 30@60c box. Cucumbers, $1.00@2.00 basket. Beans, green, $1.00@1.25 basket. Turnips, 10@15c box. Cauliflower, $2.50@2.75 bbl. Horseradish, $1.50@1.65 box. Beets, 2@3c. Asparagus, $1.25@1.50 doz. Green corn, $1.00@1.50 crate.

Fruit.—Apples, new, $2.00@3.50 bbl.; 50c@1.00 bu. Strawberries, 7@10c qt. Blackberries, 11@12½c qt. Gooseberries, 3¼@4c lb. Peaches, $2.50@3.50 crate. Raspberries, 15@16c qt.

Grain.—Wheat.—No. 2 red western, $1.03½; spot, $1.03½. Corn, spot, 63½c; contract, 64c. Oats, No. 2 white, 46c; standard white, 45¼c; No. 3 white, 44½@44¾c. Rye, 60@64c.

Hay and Straw.—No. 1 timothy, $17.50. No. 2 timothy, $15.50@16.00. No. 3 do., $12.00@13.50. Choice mixed, $14.50@15.00. No. 1 clover, $11.00. No. 2 do., $8.00@9.00. No. 1 tangled rye straw, $11.00@12.00. No. 1 oat straw, $9.00@10.00. No. 1 wheat straw, $8.00.

Millfeed.—Spring bran, $21.00@21.50; Middlings, flour to white, $26.00@28.00; western middlings, $22.50@23.00; city mills mids., $21.00@23.50.

WASHINGTON PRODUCE

Washington, D. C., June 23, 1913.

Eggs.—Near-by, fresh, per dozen, 20c; southern, per doz., 19c.

Cheese.—New York, new, per pound, 10½c; flat, 16½c.

Butter.—Best prints, per pound, 31½c; tub, 31c; process, 27c; undergrades, 25c.

Live Poultry.—Hens, per lb., 18c; roosters, 10c; springers, 24@26c; turkeys, 16@17c; geese, live, 10@12c; ducks, 15@16c.

Vegetables.—Potatoes, bbl., $1.50@3.00; 50@60c bu. Onions, $1.15@1.35 crate. Lettuce, per basket, 50c@$2.00. Beans, 75c@$1.50 basket. Peppers, per crate, 75c@$1.50. Egg plants, per box, $1.25@2.75. Squash, per bbl., 50c@$1.00. Beets, $2.00@3.00 per 100 bchs. Mushrooms, per lb., 75@80c. Carrots, 2@3c bch. Cabbage, $1.25@1.75 crate. Radishes, 50c@$1.00 per 100. Cauliflower, $1.00@2.00 crate. Asparagus, $1.25@3.00 doz. Apples, $1.50@4.00 bbl. Strawberries, 5@15c box. Cherries, 8@20c qt. Peaches, $1.50@3.50 crate. Blackberries, 6@15c qt.

BUFFALO PRODUCE

Buffalo, N. Y., June 23, 1913.

Butter.—Quiet. Creamery, choice, 29c; choice dairy, 26@27c.

Cheese.—Firm. Fancy, 16c; good, 14@15c.

Eggs.—Firm. State, fresh, 22@23c; western, 19@20c.

Live Poultry.—Steady. Fowls, 16½@18c; broilers, 28@32c; ducks, 16@18c; geese, 15@17c; turkeys, 20@21c; old roosters, 13@14c.

Vegetables.—Potatoes, easy. Home-grown, 30@35c bu. Cabbage, $2.00@2.75 crate. Onions, 40@80c sack. Beans, green, $1.50@2.50 hamp. Turnips, $1.00@1.25 bbl. Celery, 80c@$1.00 doz. Spinach, 40@50c hamp.

Beans.—Quiet, steady. Marrow, fancy, $3.35@3.40; medium, $2.30@2.50; red kidneys, $2.00@2.25.

Fruits.—Apples, $4.00@4.75 bbl.

Honey.—Firm. No. 1 fancy, 16@17c; No. 2 new, 13@15c; dark, 12c.

Hay.—Firm. Timothy, choice on track, $16.00; No. 2 do., $15.00@15.50; No. 3, $14.00@14.50; light mixed, No. 1, $13.00@13.50; rye straw, $10.00; oat and wheat straw, $8.00@9.00.

Feed.—Steady. Spring bran, $20.00 ton. Standard mids., $21.00. Corn meal, $25.50. Gluten, $23.75. Hominy, $25.00. Oilmeal, $27.50. Cottonseed meal, $32.00.

WILMINGTON PRODUCE

Wilmington, Del., June 23, 1913.

Fruits.—Apples, $1.00 basket; $5.00@5.50 bbl. Strawberries, 10@13c box. Blackberries, 12@14c. Raspberries, 10c. Huckleberries, 12c.

Vegetables.—Potatoes, 75@85c bu.; new, $2.00@2.35 bbl. Cabbage, $2.50@3.00 bbl. Onions, $1.25 crate. Spinach, $1.00 bbl. Sweet potatoes, 75c basket; $2.50 bbl. Kale, $1.00 bbl. Lettuce, $1.00 basket. Asparagus, $2.00@2.50 doz.

Poultry.—Chickens, live, 18@19c; do., dressed, 20@22c. Ducks, 13c lb.; dressed, 16c.

Eggs.—21@22c.

YORK PRODUCE MARKET

York, Pa., June 23, 1913.

The supply of berries and fruit is increasing. The display of vegetables was excellent. Butter is weakening. Eggs are unchanged.

Butter.—Country, 25@32c; separator, 3x@35c. Milk 5c per qt.

Eggs.—20@21c doz.

Poultry.—Hens, 15c lb.; springers, 23c lb. Dressed poultry, 40@90c each.

Vegetables.—Potatoes, new, 15@20c ½ peck; old, 60@75c bu.; cabbage, 2@6c each; lettuce, 2@6c; beets, 3@5c bch; radishes, 2@5c; onions, 2@4c bch.; lima beans, 12c qt.; soup beans, 7@10c qt.; sweet potatoes, 12@15c per ½ pk.; lard, 12@15c lb.; celery, 3@10c; rhubarb, 3@5c bch.; asparagus, 5@8c bunch; spring beans, 25c per ½ pk.; peas, 12@20c per ½ pk.

Fruit.—Apples, 25@35c a half peck; strawberries, 7@18c box; cherries, 5@10c box; currants, 10c box.

Retail Grain Market.—Wheat, $1.13; corn, 75c; oats, 50c; bran, $1.15 a cwt.; rye, 65c; middlings, $1.40 a cwt.

Wholesale Grain Market.—Wheat, $1.03; corn, 63c; oats, 43c; rye, 55c.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., June 23, 1913.

The cattle market during the past week was dull and lower on all grades.

	Beef Cattle	Sheep and Lambs	Hogs
Total for week	3,365	11,824	3,934
Previous week	2,875	11,471	4,352

Best steers	$8.60@8.75
Choice steers	8.40@8.50
Good	8.20@8.30
Medium steers	7.75@8.00
Common steers	7.25@7.50
Bulls	6.00@7.50
Fat cows	6.25@6.75
Thin cows	3.00@4.00
Milk cows	40.00@65.00

Veal calves lower.

Best calves	$10.50@11.00
Good to choice do.	10.00@10.50
Medium	7.00@8.00
Common do.	6.50@7.00
Thin do.	5.00@8.00

Sheep and lambs are lower.

Choice sheep	$5.25@5.50
Good wethers	4.75@5.00
Common to medium	2.50@4.50
Ewes, fat	4.00@4.50
Extra lambs	8.00@8.25
Good to choice do.	8.00@8.25
Common to medium	5.00@7.50

The hog market was easier thruout the week at $12.00@12.25.

City Dressed Stock.—Choice classes of dressed meats are steady. Trade is normal. Steers, 11½@13½c; heifers, 11@13c; cows, 9@12c. Veal calves, 14@16c; country dressed calves, 14@15c; extra do., 15½c. Sheep, 10@11c; extra wethers, 11½c. Spring lambs, 15@16c. Hogs, 12¼@12½c.

PITTSBURGH LIVE STOCK

Pittsburgh, Pa., June 23, 1913.

The supply of cattle last week was a little heavier than the week preceding, but with a good demand the market ruled active and generally 10 to 15 cents higher; most of the advance being on the good cattle. Plain and grassy grades were about steady. Best heifers and bulls were in demand and stronger. Today's receipts were 77 loads. With a good demand the market ruled active and a shade higher on fat grades, but steady on others.

Good to choice	$8.65@8.75
Good, 1300 to 1400 lb.	8.40@8.60
Medium to good, 1200-1300 lb.	8.20@8.35
Tidy, 1050-1150 lb.	8.10@8.30
Fair to medium, 900-1100 lb.	7.90@8.10
Common to good fat oxen	5.00@7.00
Common, 700-900 lb.	6.00@7.25
Common to good fat bulls	5.00@7.75
Common to good fat cows	4.75@7.00
Heifers, 700 to 900 lb.	5.50@8.00
Fresh cows and springers	20.00@80.00

Veal calves were in fair supply all week and prices ruled 50 cents lower. Today's receipts were 1,000 head. The market ruled slow at steady prices.

Heavy and thin calves	$4.50@6.50
Veal calves	8.00@10.50

The hog supply was liberal all week. Mid-week prices were lower, but the loss was made up during the latter part of the week. The close was 5 cents lower than Monday's prices. To-day's receipts were 50 double-deck loads. The market ruled steady.

Prime heavy	$8.80@
Prime medium weights	$9.00@
Heavy mixed	8.90@
Best heavy Yorkers	9.00@
Light Yorkers	9.00@
Pigs as to quality	8.95@9.00
Common to good roughs	7.40@7.75
Stags	6.50@7.00

The supply of sheep and lambs was liberal all week and prices declined the worst of this season, sheep closing 75 cents per cwt. lower. Lambs were $1.25 per cwt. lower, both on springers and yearlings. To-day's receipts were 40 double-deck loads. The market was slow but steady on choice sheep and lambs, and slow and lower on other grades.

Prime wethers	$4.75@5.00
Good mixed	4.50@4.75
Fair mixed ewes and wethers	3.75@4.25
Culls and commons	2.00@3.00
Spring lambs	4.50@7.00
Culls to choice lambs	3.00@6.00

BUFFALO LIVE STOCK

Buffalo, N. Y., June 23, 1913.

There was a fair demand for good butcher cattle after Monday, at firm values. Monday's trade was the best in some weeks. The close was firm. Grass cattle were in light demand. With a run of 215 loads on sale today the market broke badly, dry-fed cattle holding steady to 10 cents lower, while other grades sold 25 to 50 cents lower.

Choice heavy steers	$8.50@9.00
Medium	7.00@8.25
Yearlings	7.00@7.75
Handy butchers	6.75@8.25
Good to choice fat cows	4.00@4.25
Good to choice heifers	5.75@6.00
Butcher bulls	6.50@7.00
Feeders	6.00@7.75
Stockers	4.75@6.75
Cows and springers	30.00@85.00

Considering the liberal supply of calves, trade was fair last week at lower prices. The market strengthened at the close and prices were 50 cents higher. Arrivals today totaled 1,700 head.

Choice veals	$10.00@10.25
Light and thin	4.00@6.50

Lambs were low all last week, even under light receipts. Yearlings sold 40 cents lower, and there was a light inquiry for sheep. The week's close ruled slow and all grades were 25 to 50 cents lower. With 30 cars on sale today, all grades continued to slump.

Choice lambs	$7.00@7.25
Poorer grades	6.50@7.00
Yearlings	5.00@6.00
Wethers	4.75@5.00
Ewes	3.50@4.25
Sheep	4.50@4.75

The hog market was in a satisfactory position thruout the week. Offerings on the close were liberal, and the demand good for all grades. The trade was active. With 100 cars on sale today the prices continued downward.

Heavies	$9.00@9.05
Mixed and medium	9.00@9.05
Yorkers	9.00@9.05
Light Yorkers	9.00@9.05
Pigs	9.00@9.05
Roughs	7.70@7.80
Stags	6.50@7.25

NEW YORK LIVE STOCK

New York City, June 23, 1913.

Cattle receipts for the week were 2,491 head. The market was lower.

Steers	$6.50@9.00
Bulls	5.50@7.60
Cows	3.50@6.75

Dressed beef is steady. Native sides, 12@13½c.

Calf receipts were 5,928 head. The market is steady to 25 cents lower.

Choice veals	$7.50@11.00
Good veals	5.50@6.37½
Culls	6.50@7.00

Dressed calves weak.

City-dressed veals	13@16½c
Country-dressed veals	11@14c

Sheep and lamb receipts were 19,704 head. Sheep barely steady, lambs lower.

Clipped sheep	$3.00@4.50
Wethers	4.65@5.00
Culls	2.00@2.75
Spring lambs	6.50@7.50

Hog receipts were 7,188 head. The market is steady at $9.00@9.20.

BALTIMORE LIVE STOCK

Baltimore, Md., June 23, 1913.

Beef receipts for the week were 1,036 head. The market is steady to 10c lower.

Steers	$6.75@8.20
Heifers	5.65@7.15
Cows	3.25@6.00
Bulls	6.25@6.90
Fresh cows	22.00@77.00

Sheep and lamb receipts were 8,639 head. Under a liberal supply the market is steady.

Sheep	$2.00@5.00
Lambs	6.00@7.50
Spring lambs	6.50@8.50

There were 9,821 hogs on sale during the week. Under a fair supply the market is steady.

Light western	$9.35@9.50
Heavy to medium	9.10@9.35
Near-by	9.10@9.30
Pigs	9.30@9.35
Roughs	7.50@8.25

Calf receipts for the week were 612 head. Most of the receipts were of unattractive stock, and under a fair supply the market is lower at $5.50@9.75.

ELGIN BUTTER QUOTATION

Elgin, Ill., June 23, 1913.

The quotation committee of the Elgin Board of Trade this afternoon declared butter firm at 27½c a pound.

NEW YORK MILK QUOTATION

The wholesale price of milk is considered to be $1.41 per 40-quart can for class C; class B, $1.51. Official quotations have been abolished.

PITTSBURGH HAY AND GRAIN

Pittsburgh, Pa., June 23, 1913.

Hay receipts continue light, and under an improved demand prices have advanced a shade on the good grades. Poor grades are not wanted. Oat and wheat straws are in excess of the demand, and the market is lower. Rye straw is in demand and very limited supply. No. 1 timothy, $14.50@15.00; No. 2 do., $12.00@13.00; No. 3 do., $9.00@10.00; No. 1 light mixed, $12.00@12.50; No. 1 clover mixed, $11.50@12.00; No. 2 do., $9.00@10.00. No. 1 clover, $11.50@12.00; No. 2 do., $7.00@10.00. No. 3 prairie, $10.50@11.00; No. 4 do., $8.00@8.50; No. 1 oat straw, $7.50@8.00; No. 2 do., $7.00@7.50. No. 1 wheat, $7.50@8.00; No. 2 do., $7.00@7.50; No. 1 rye, $11.00@11.50; No. 2 do., $9.25@9.50. Ear corn arrivals are in stronger demand. No. 2 yellow, 67@67½c; No. 2 high mixed, 65@66c. Shelled corn receipts are in excess of demand. No. 3 yellow natural, 65½@66c; sample, 63@64c. Oats are in stronger demand and the market has advanced on all good grades. No. 2 white, 46@46½c; standard, 45@45½c; No. 3 do., 46@46½c; No. 4 do., 42@43c. The demand for middlings is slow. Market dull. No. 2 white mids., $23.75@24.25; No. 1 brown mids., $21.25@21.75. Winter wheat bran, coarse, $22.00@22.50; do., medium mids., $21.00@21.50.

TOBACCO MARKET

It is now evident that the tobacco acreage will be considerably affected by the sharp drouth which has prevailed just at the time of transplanting. The season is now practically past, and those who have failed in tobacco will, in most instances, plant corn, beans or some quick-maturing crop. The drouth has been a record maker, both for cold and heat. In other states, too, transplanting has been next to impossible, owing to drouth. This adverse situation, however, only renders the prospect better for those who succeed in growing a crop.

Market conditions are not encouraging as yet, but advances are expected in the near future. But little of the 1912 crop remains in grower's hands, and this is being sought by packers. Prices are about the same as in recent weeks, the range being from $5 to $7 per cwt. for crop lots. Following one of their old tactics, the trust is not buying but leaving the field to the small speculators who lie in wait for the grower who is compelled or determined to sell with more or less disregard for price. With a probable short crop this should be a good year to effect an organization. The stumbling block, in all probability, will be better prices which the crop will naturally command, thus causing growers to be careless as to the necessity of united action for permanently better prices.

While Pennsylvania and near-by states lead the world in the production of tobacco, the somewhat out-of-the-way state of Missouri leads all others in the volume of manufactured tobacco. It has just developed that in 1912 this state broke the world's record in this respect, with a total output of 62,048,190 pounds. During the same year the state produced but 6,000,000 pounds of leaf tobacco. Another recent development is that our country leads all others in tobacco consumption, the average yearly amount per capita smoked, chewed or snuffed being about 16 pounds. During 30 years the consumption has increased 250 percent.—H. E. Tweed, June 23, 1913.

NEW YORK INSTITUTES

A good many are asking the question, has the farmers' Institute served its purpose and must it now give way to the county farm bureau? Many will answer the question in the affirmative. It is quite apparent that the farm institute does not exactly meet the needs of the farmer in that it does not bring right down to practice the things that are taught. The county farm bureau is with the farmer the year around, and the bureau agent gets right on the farm and shows how to do things if need be.

If the institute has seen its day and has not brought the help to the farmer that it should, it is not altogether the fault of the system. In some cases, of course, the instruction has been above the heads of the farmers, but on the other hand the fault of the farmer is in that he will not adopt new methods readily and prefers to let someone else experiment. He is too conservative, thinks he can not afford extra expense entailed by modern methods, believes he knows as much about farming as does the man from the agricultural college or other "book" farmers, and so he returns from the institute unconverted to modern methods and modern views. The effect of the farm bureau on the farm institute will certainly be watched with interest.—D

Household

USES OF FRUIT IN THE DIET

Some time ago the writer visited a farmer who is past seventy years young. He still enjoys working on his farm. He can work all day with the younger men, and he is escaping in a large degree the diseases and decrepitude of old age. His complexion is still nearly as fresh and fair as that of the young men. He has always lived a regular, temperate life on the farm, and does not use tobacco, liquor or stimulants; he is a cheerful, hopeful, Christian man.

The natural result of right thinking and living should be a desire for a diet that is in harmony with good thoughts and clean living, and it is deplorable that many people who are seeking after the truth in many ways have not seen the ideal diet. They still believe they want a steady meat diet, and do not see that if they would eat less of animal food they would avoid the penalties of excessive meat eating, which good medical authorities tell us are rheumatism, cancers, Bright's disease, etc. My point is that this farmer has seen the diet that is more in harmony with right living, and in early life formed the apple habit, and in old age he is still eating apples, several every day, and knows they are good for both mind and body.

We like to know about the habits of people who are getting the most good out of life, and who in old age are still vigorous and doing their best work. One of these is our well-known American naturalist, John Burroughs. In his book entitled "Sharp Eyes," he says many good things about apples, and has so much faith in them that he goes so far as to say that "Apples are a cure for all the ills of human life." And our other great naturalist, Thoreau, was an inveterate apple eater. There seems to be a moral effect from fruit eating. Some way tobacco, liquor and a large use of fruit in the diet do not go together. The former destroy the appetite for the latter. When I see a young man smoking I wish I could make it fashionable to eat an apple in place of smoking the cigar. Many people are ready to follow a new fad, and one of the best of these would be apple eating, i. e., the high-class dessert apples that are good to eat.

To this I wish to add the testimony of one who should be one of the best authorities on dietary subjects. Prof. Flora Rose, of the Home Economic Department, Cornell University. The following is selected from my notes of her address to the convention of the New York State Fruit Grower's Association, in Rochester last winter:

"The great problem is how shall we produce the best type of men? To do this we need the best food. I find better complexions, brighter eyes, and cleaner minds where plenty of fruit is eaten. Do not buy Rochell salts as a liver stimulant, but eat plenty of fruit in the diet. Fruit stimulates appetite which is necessary for digestion, or a flow of the digestive juices, also the activity of the intestines. The functions of the body get out of order if not regulated in some way. This is best done by fruits, the main use of which is to regulate body functions. From the standpoint of Materia Medica, fruit eating is a dietary question.

"Waste products which accumulate in the blood are carried away by fruit eating. Fruits yield an acid to the blood. Diets that are rich in fatty foods should be rich in fruit, as pork and beans with apple sauce. If you have a normally strong digestion, do not be afraid to eat fruit and milk at the same meal, altho I would not advise strong acid fruits with milk. If I craved it I would eat fruit both at the beginning and close of the meal, and before going to bed, and expect no bad results. It will do you good to go back to the days of childhood and like the apples again. Raw fruit is better than cooked fruit, if you can digest it, but eat fruit in some form, whether raw, cooked or dried. If the apples do not digest well, begin by scraping it. It will do nearly everyone much good to eat from four to six apples a day. Eat the different fruits in their season, especially grapes. Too many sour cherries are not advisable. Raspberries and blackberries have too many seeds to be eaten in very large quantities. If the large amount of acid does not disturb you, eat freely of strawberries."

From the earliest strawberries until the late-keeping winter apples in spring, we have plenty of home-grown fruits. People never know the true taste and lusciousness of fruits unless they grow varieties of high quality and do not pick them until fully ripe.

When we eat commercial fruit we may get varieties that are low in quality, because they are more productive and easily grown, and they are picked so they will ship well. If one has only a small plot of land he can have a fruit garden and grow all the small fruits, and the tree fruits on dwarf trees, and eat them first hand. We grow strawberries, all the cane and bush fruits and have a large family vineyard. We have the most of the tree fruits, but of most value is our dessert winter apples.

I procured scions of choice varieties and we have now these grafted into trees formerly bearing worthless apples, and we have apples that are both good to look at and to eat. All of the family eats apples raw, and often several every day. On our table we have at about every meal in winter apples stewed, baked, or in pies, dumplings, marmalades, jellies, apple butter, apple drinks, etc, as shown by photo. Let us join the apple consumers' league and help along a propaganda for apples and for other fruits by asking for them every where in public eating houses, and always be ready to say a good word for fruit.—W. H. J.

GROUP OF TOOTHSOME PRODUCTS, APPLE BUTTER, APPLE JELLY, APPLE SAUCE, AND APPLE MARMALADE

HOW TO WARM WRAPPED BREAD

Many persons who are fond of freshly baked and even warm baker's bread have, it seems, been opposing the modern sanitary method of having all bread wrapped and sealed cold and not handled by clerks or exposed to dust, flies, germs and filth on counters or in wagons. The Bureau of Chemistry of the Department of Agriculture regards the wrapping of bread as so important that it has caused the Plant Chemistry Laboratory to make a series of experiments to determine whether those who like fresh or warm bread can not get what they want in wrapped form. Bread fresh from the oven if wrapped while warm becomes moist and clammy and of unpleasant flavor. Loaves therefore must be allowed to cool thoroly before being wrapped. After some experiment, the experts found that if a cold wrapped loaf is unwrapped and placed in a pan in the oven in good medium heat for 10 minutes, it will be as good as fresh, crisp without and tender within, and, at the same time, will be free from any pollution it might have gained if conveyed unprotected from baker to consumer. The Bureau believes that if lovers of warm bread will try this plan they, too, will become ardent advocates of the clean, wrapped method of purveying bread.

Rags For Many Uses.—Who has not wanted rags for widely varying uses. First, for a cut finger, or to clean a bicycle, wash windows, etc. Only after a long search could the right one be found. Old handkerchiefs should be rolled up and saved for cuts and burns. Old night dresses and white shirts should be saved for bandages in case of accident. Union suits should be cut in suitable sized rags for cleaning windows, woodwork, floors, etc., and for dishcloths. Old socks make excellent mops, and should be cut open and the ragged portions removed. Women's stocking legs make excellent dusters, when cut open, and two or more may be sewed together if a large one is desired. Old pieces of flannel should be carefully saved for use in case of illness. These rolls of sorted rags should be labelled and placed in a drawer or box kept for that purpose, where any member of the family can instantly produce just the right kind of rag when needed.

Mrs. Dairyfarm—"I declare, I never saw anything like the easy way I can wash all these greasy milk pans. I used to have to scald and scrub them. But Fels-Naptha Soap just makes the dirt disappear and it's no work at all!"

Anty Drudge—"I told you so! And no carrying heavy pails of hot water either! I guess you're glad you took my advice."

With cool spring water, Fels-Naptha Soap, and no tiresome scrubbing, milk pans will shine like new.

Fels-Naptha Soap is just as good for all housework. The weekly wash will be on the line in half the time it used to take, and you won't be all tired out with hard rubbing up and down on a washboard. The clothes don't have to be boiled, either, because Fels-Naptha Soap works best in cool or lukewarm water.

Just follow the directions on the Red and Green Wrapper.

Fels & Co., Philadelphia.

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9c PER FOOT

Best Quality Copper—Extra Heavy Cable
A better conductor than required by Insurance Companies. System complete with full directions for installing. No agents. You get wholesale price.
Buy Direct—On Trial—Freight Prepaid
Pay after you are satisfied. Our Rods are securely protecting thousands of farm homes and will protect yours. Write postal for FREE book on lightning protection. Tells plainly just the facts you will be interested in. Ask for it today.
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MUTILATED TEXT

Veterinary

(Conducted by W. C. Fair, V. S.)

(Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also name and address of writer. Initials only will be published. When reply by mail is requested, it becomes private practice, and a fee of $1 must accompany the letter. This is one of the most valuable columns of the paper and we invite readers to make use of it. Clippings from this column, when properly preserved and classified, would make one of the most valuable medical symposiums a farmer-stockman could obtain.)

Stifle Lameness.—My yearling colt has bunch on each stifle joint causing stiffness and lameness. This trouble came on this spring, but the joints do not dislocate. N. B., Townville, Pa.—Apply 1 part red iodide of mercury and 8 parts fresh lard to bunches every day or two.

Navicular Disease.—I have a horse whose forefeet seem to be perfect, yet he is very lame in front. He lays down most of time and when on foot points first one foot then the other, is very stiff when he first stands and stumbles considerably. He shows considerable soreness when going down hill, and when turning is inclined to make a large circle, but when turned short is very sore. The muscles of chest are somewhat smaller than normal and I have thought he perspired too freely whenever he is driven. Whenever we rub the muscles of fore arm he is inclined to hold up leg and I have thought he drank too little water. He moves much like a horse that had been foundered. G. H., Middletown, N. Y.—Your horse suffers from coffin joint lameness and will perhaps be benefited some by blistering coronets, using I part red iodide of mercury and 10 parts cerate of cantharides, once or twice a week. His fore feet, if hard, can be softened by oiling them with lanolin, once a day.

Atinymicosis (Lump Jaw).—I have a cow that has a hard lump about the size of a hen's egg on her upper jaw. What can I apply that will remove this enlargement? H. W. P., Newport, Pa.—Apply 1 part red iodide mercury and 6 parts cerate of cantharides to bunch, every four or five days, and give her 2 dr. of potassium iodide at a dose in feed or water, 3 times a day.

Lump on Teat.—For the past six weeks my cow has had a lump in the end of one teat, and I am obliged to spend 30 or 40 minutes' time milking her. J. P., Washington, N. J.—Use a milking tube, but be sure that it is clean. Better boil it for 10 minutes before it is used, or allow it to remain in a 5-percent solution of carbolic acid for a few minutes.

Ringbone.—We have a 3-year-old colt that does light farm work which recently went lame in right hind leg. The only swelling noticeable on leg is on pastern. This thickening is hard and somewhat inflamed. He seems to show less lameness after exercising a few minutes. Neighbors give me all sorts of advice, but I hesitate to doctor him on their say so. He is a good colt, and if this lameness can be cured he will sell well. W. A. L., Sharon, Pa.—Give him rest, and if you need him to work, drive no faster than a walk. Apply 1 part red iodide mercury and 4 parts fresh lard to bunch, once a week. The ringbone and spavin remedies that are regularly advertised in this paper are reliable and you can safely use any of them.

Ringworm.—One of my yearling colts has several sore patches on head and neck that are spreading. The simple home remedies we have applied fail to check it. Whenever he has a chance he rubs head and neck. A. H. J., Jamestown, N. Y.—I am inclined to believe you have a case of ringworm. If you will apply 1 part iodine and 10 parts fresh lard to sore spots and surrounding places of sores, 2 or 3 times a week, you will soon be able to effect a cure. Painting these patches with tincture of iodine will also prove effective.

Warbles.—One of my cows has a few bunches on back, but she shows no symptoms of sickness so far as I can tell. Her appetite is good and she gives her usual yield of milk. B. E. T., Hughesville, Pa.—Open bunches with a sharp penknife, squeeze out grub, kill him and apply boracic acid to sore, once a day, and she will soon be well.

Scurvy.—I have a 2-year-old brood sow that has a sort of scurvy or scaley condition of skin which causes her to itch. K. I. O., New Mayville, Pa.—Apply 1 part oxide of zinc and 4 parts vaseline every day or two, or apply 1 part coal-tar disinfectant and 6 parts vaseline, once a day. She should be fed plenty green food.

CANNERY STUDIES AT MARYLAND COLLEGE

At a meeting of the City-Wide Congress Committee on Maryland Agricultural College, the mutual advantage of a possible co-operation between the college and the recently established Washington bureau of the National Canners' Association was discussed and action taken toward bringing this matter to the proper authorities. This committee, in its reports on Maryland Agricultural College urged that the production of table products be featured by this institution, and that a number of small plots for truck growing rather than the customary "model farm" be established for demonstration and experiment.

It now suggests the establishment of a model cannery in connection with these plots, the growing of crops in such a manner as to make possible the operation of the cannery for an entire season instead of a few weeks; the training of reliable help to work both in the field and the cannery and the organization of the entire industry in such a manner as to raise it to a higher plane of economic efficiency. It also suggests the possibility of studying, thru existing agencies, plant bacteriology, plant diseases and insect life as these sciences may effect the production and packing of canned goods.

The establishment of special courses on the production and proper handling of such food products from field to table both for the general student body and in connection with the special courses to be provided for all teachers of the state would follow as a matter of course. The proximity of the college to Washington would make such an arrangement with the National Canners' Association quite possible. When once established its summer courses should become very attractive, not only for the teachers of Maryland, but for the teachers of the nation who might desire to visit the National Capital and incidently take a summer course in this phase of home economics.

NEW BULLETINS

The Flea Beetle.—The flea beetle is, next to the Colorado potato beetle, the most destructive of the annually recurrent insects on the foliage of the potato. Circular 467, just issued by the Maine Agricultural Experiment Station, deals with this insect, giving an account of its habits, both as a white slender grub under ground and the black jumping adult feeding on the leaves. Particular attention is called to the fact that these small insects feed on the under surface of the leaves, which emphasizes the need of a spray which will protect that part of the plant. The insect is not only a dangerous one on account of its feeding injuries but also because early blight attacks injured leaves more readily than healthy ones, and the punctures made by the flea beetle serve as points of entrance for the germ tubes of the spores of the fungus. The bulletin is issued from the above Station, Orono, Me.

Cheese.—The food value of cheese is not generally understood by most housewives. Farmers' Bulletin 487, of the Department of Agriculture, Washington, D. C., discusses the value and manufacture of the various kinds of cheeese, and gives recipes for making many attractive dishes high in food value, of which cheese is an important ingredient. The bulletin will be sent free upon request to the department.

Birds.—There is no more important work before the farmer today than to protect and foster bird life on the farm. The whole problem of insect control depends largely upon the preservation of the birds. Farmers' Bulletin 506, of the Department at Washington, describes the more common farm birds and gives their foods. This is a very important subject and should be thoroly studied by every farmer in the country. The bulletin is free upon request.

Bundle Corn Beef Production.—The Experiment Station at St Paul, Minn., has recently issued Bulletin 34, describing the methods used at that station to fatten steers on bundle corn. The management includes stocker and feeders in relation to beef production, giving the equipment necessary, costs and profits. Several photographs appear, showing the type of cattle used in the work.

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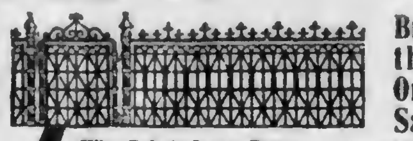

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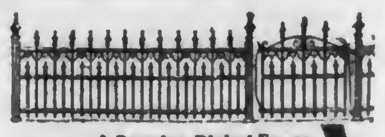

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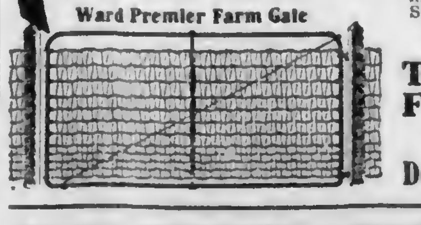

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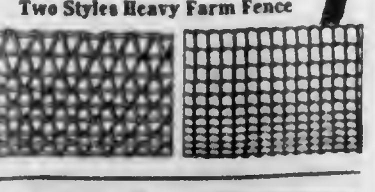

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